THE physical therapy REVIEW

Adaptations of Neuromuscular Facilitation Technics — TORP

Parkinson's Disease: Aspects of Functional Training — MURRAY

A Useful Aid in Early Paraplegia Training — DOMAN and DOMAN

An Above-Knee Pylon with a Functional Knee Joint — HOOG

Annual Reports

Volume 36 - Number 9 **September 1956**

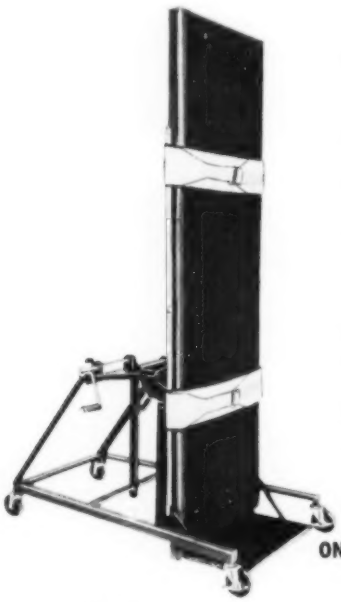
PUBLISHED MONTHLY BY

AMERICAN PHYSICAL THERAPY ASSOCIATION

THE *New* PRESTON STANDING TABLE

Preston Catalog Number PC 7194-U

This newly developed Standing and Treatment Table is manually operated by means of a hand crank. The sturdy base, constructed of angle iron, has a brown enamel crinkle-finish. The table top is 24" wide; 78" long; 32" high, and is upholstered with durable waterproof leatherette.



features . . .

EASE OF OPERATION—A special worm and gear arrangement permits tilting the table with minimum effort. The crank handle is near the top, obviating the need for the therapist's bending.

TILTS FROM HORIZONTAL TO VERTICAL position (from 0—90 degrees). Locks automatically at any desired angle.

EASY PASSAGE through narrow doorways and corridors. Over-all width held down to 29". Crank handle folds out of the way.

EASY TRANSFER of patient from bed or stretcher to table. Height of top—32" from floor.

EASILY MOVED with its four large 4" ball bearing swivel casters, two of which have step-on brakes.

COMFORT TO PATIENT is assured by upholstered top of durable waterproof leatherette. Footboard has a non-slip surface. Two heavy-duty restrainer straps hold patient securely on table. Square rails on each side of table permit placing restrainer straps or auxiliary equipment in any desired position.

PROTRACTOR to indicate degree of tilt from 0 to 90 degrees.

STORED IN SMALL SPACE—Requires only 29" x 44" for storage, with top in vertical position.

ONE YEAR GUARANTEE AGAINST DEFECTS IN MATERIAL OR WORKMANSHIP

THE *Only* QUALITY TABLE AT AN *Economy Price!*

Designed for EASE OF OPERATION, COMPLETE SAFETY and SIMPLICITY, with a resultant LOWER PRICE THAN COMPARABLE UNITS.

CATALOG NO.
PC 7194-U Standing Table, including Upholstered Top. Complete with 4" casters and two Restrainer Straps

PC 7195S Additional Restrainer Straps 7.50

Prices F.O.B. New York, N. Y.

$245

Send all orders directly to

J. A. PRESTON CORP.
175 FIFTH AVENUE, NEW YORK 10, N. Y.

PRESTON

A Complete Line

FOR PHYSICAL MEDICINE AND REHABILITATION

REHABILITATION:

Walking Parallel Bars and Exercise Staircases of various designs; Posture Mirrors, single and triple; **Gymnasium Mats** in various thicknesses and coverings; **Bicycle Exercisers;** Restorator; **Progressive Resistance Exercise Units;** Quadriceps-Gastrocnemius-Footdrop Boots; Dumbbells; Indian Clubs; **Wall Pulleys;** Door Pulley Assemblies; **Guthrie-Smith Suspension Apparatus;** Stall Bars; **Shoulder Wheels** with height adjustment; Manuflex and Gym Kit; Kanavel Table; **Sayre's Headslings;** Ankle Exercisers; Large selection of **Treatment Tables;** Timers.

INVALID EQUIPMENT:

Everest & Jennings Wheelchairs; Hollywood Wheelchairs; Commodes; **Walkers;** Patient Lifters; **Standing (Tilt) Tables;** Self-propelled Wheelstretchers; Large selection of **Crutches,** hardwood and aluminum; **Canadian Crutches; Tripod** and **Four-legged Canes.**

HYDROTHERAPY—ELECTROTHERAPY:

Whirlpools for every use; Hubbard Tanks; **Paraffin Baths; Hydrocollator Master Units** and **Steam Packs; Ries "Moistaire";** Shortwave Diathermy – Consoles and Portables; Galvanic-faradic-sinusoidal Generators; Ultraviolet Lamps; **Infra-red Lamps and Bakers; Ultrasonic Generators.**

CEREBRAL PALSY EQUIPMENT

Wide variety of **Stand-in Tables,** Cut-out Tables; **Kindergarten Chairs,** Relaxation Chairs; **Standing Stabilizers;** Crab Crutches; Skis; Crawler; **Protective Helmets** (Headguards); Tricycles.

SELF-HELP DEVICES:

For Activities of Daily Living: **Toilet and Bathing Aids;** Automatic Page Turner; Reachers; Eating Utensils and **other A D L Equipment.**

DIAGNOSTIC APPARATUS

Chronaximeters; **Dynamometers;** Newman Myometer; **Goniometers;** Oscillometers; Thermocouples and Skin Thermometers.

Featured Item for September

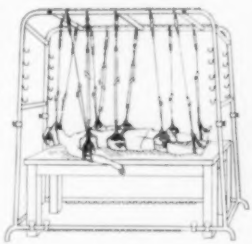
THE GUTHRIE SMITH APPARATUS

Permits a great variety of remedial exercises with limb suspension or full body suspension. The apparatus originated in England and is one of the mainstays of the British rehabilitation clinic. It is finding more and more recognition in the U. S. and is now successfully used in a considerable number of PMR Departments.

Literature upon request

Price complete, including suspension gear, for standard model (PC 2110) or portable model (PC 2120)

$295.00



With our large stock of equipment you are always assured of prompt delivery.

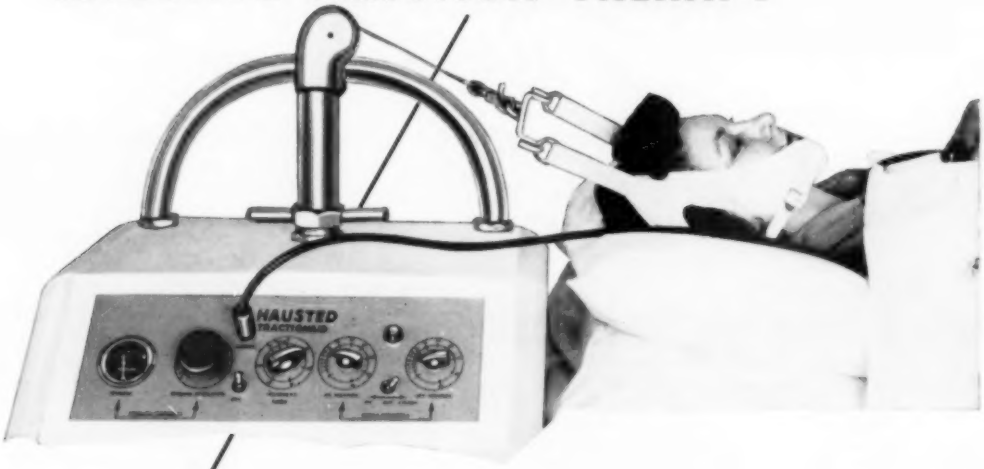
Write for Your Free Copy of our Illustrated Catalog #1056 and for any additional information.

ALL your needs supplied by ONE reliable source.

J. A. PRESTON CORP.

175 FIFTH AVENUE, NEW YORK 10, N. Y.

PROVIDE PATIENTS WITH MODERN, EFFECTIVE TRACTION THERAPY



New HAUSTED TRACTIONAID *Compensates for Patient Movement Up to 18 Inches!*

Successfully used in the treatment of:

- LOW BACK DISORDERS
- LUMBO-SACRAL STRAIN
- HERNIATED CERVICAL DISKS
- OSTEO-ARTHRITIS OF CERVICAL SPINE
- MUSCLE SPASMS OF THE NECK
- FIBRATIC CONDITIONS
- MANY CASES OF SCIATICA

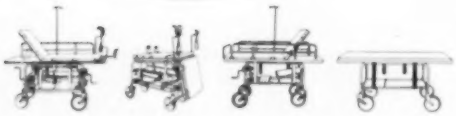
And many other conditions requiring steady or intermittent traction.

The New HAUSTED TRACTIONAID is the ultimate for steady or intermittent application in either pelvic or cervical traction.

Three years of field testing have proved it trouble-free and dependable. One unit has operated continuously, 24 hours a day, for a full year — without maintenance or servicing!

Traction supervision is practically eliminated because the TRACTIONAID — electronically controlled and hydraulically operated — automatically compensates for as much as eighteen inches of movement on the part of the patient.

Extension arms permit traction from any angle, any position. TRACTIONAID can be used with the patient sitting or prone. Clinical experience shows that many patients can be spared hospitalization when treated as out patients with the Hausted TRACTIONAID.

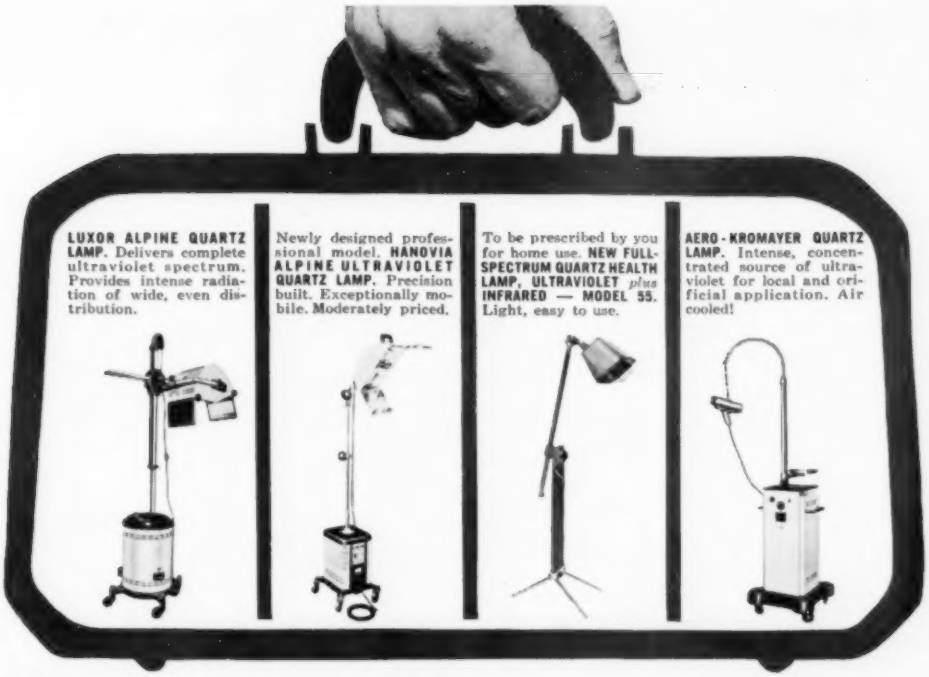


The Hausted Manufacturing Co. also produces a complete line of Hospital Stretchers and Accessories.

For detailed information and user testimonials, write The Hausted Manufacturing Co., Medina, Ohio.

HAUSTED MANUFACTURING CO. MEDINA, OHIO

ONLY HAUSTED PROVIDES SUCH A LARGE SELECTION OF USEFUL ACCESSORIES


LUXOR ALPINE QUARTZ LAMP. Delivers complete ultraviolet spectrum. Provides intense radiation of wide, even distribution.
Newly designed professional model. HANOVIA ALPINE ULTRAVIOLET QUARTZ LAMP. Precision built. Exceptionally mobile. Moderately priced.
To be prescribed by you for home use. NEW FULL-SPECTRUM QUARTZ HEALTH LAMP, ULTRAVIOLET plus INFRARED — MODEL 55. Light, easy to use.
AERO-KROMAYER QUARTZ LAMP. Intense, concentrated source of ultraviolet for local and orificial application. Air cooled!

Ultraviolet therapy speeds convalescence!

Recognized ancillary treatment in physical rehabilitation

Essential adjunct in physical medicine, ultraviolet treatment is particularly effective in increasing blood hemoglobin level. Exposure to Hanovia ultraviolet improves absorption and ultilization of calcium, iron, nitrogen and phosphorus.

Authoritative report reads: "The blood changes produced by ultraviolet radiation are increased number of red and white cells and platelets, lowered blood sugar, increased sugar tolerance, increased blood calcium, relative lymphocytosis and eosiniphilia." Other authorities report: "Ultraviolet exerts a glycogen storing effect preventing the lowering of respiratory quotients after muscular exercise."

In addition to your office use of ultraviolet equipment, ease your schedule by prescribing home ultraviolet therapy, yet maintain treatments under your control. New Hanovia Health Lamp Model 55, prescribed by you, may be purchased from surgical supply dealers.

Yours On Request: Valuable authoritative treatise describing ultraviolet in physical rehabilitation. Without obligation, write for your free copy. Dept. PTR-9

World-Leader in Ultraviolet
for Over 50 Years
Hanovia scientists and engineers have made major contributions to the vast improvement in physical therapy equipment, keeping pace with modern science and clinical requirements.
HANOVIA CHEMICAL & MFG. CO.
GREATEST NAME IN ULTRAVIOLET
ENGELHARD INDUSTRIES
100 Chestnut Street Newark 5, New Jersey
Chicago • Cleveland
Washington, D. C.
Los Angeles • San Francisco

THE physical therapy REVIEW

560 Vol. 36, No. 9

published monthly by the
American Physical Therapy Association
at 1790 Broadway, Room 310
New York 19, N. Y.

Editor-in-Chief: SARA JANE HOUTZ

Associate Editor: BEATRICE WHITCOMB

Managing Editor: CAROL VANCE

Assistant Editors: HELEN HISLOP, MARY E. KOLB, RUTH M. LATIMER, KATHRYN SHAFFER

Membership in the American Physical Therapy Association is $20.00 a year, including a subscription to THE PHYSICAL THERAPY REVIEW. Subscriptions for nonmembers to THE PHYSICAL THERAPY REVIEW, $6.00 a year; $6.75 in Canada and foreign countries. Single copies 75 cents. (50 cents to members.) Reentered as second class matter August 11, 1949, at the post office at New York, N. Y., under the act of August 24, 1912.

The statements in the manuscripts published in THE PHYSICAL THERAPY REVIEW are made solely on the responsibility of the author. The American Physical Therapy Association does not assume any responsibility for statements contained therein. Manuscripts accepted for publication in THE PHYSICAL THERAPY REVIEW are for exclusive publication and may not be published elsewhere without permission.

Officers

President ..... E. Jane Carlir
Vice-President ..... Helen Vaughn
Secretary ..... Louise Bailey
Treasurer ..... Dorothy Hoag
Speaker, House of Delegates .... Agnes Snyder

Directors

DOROTHY GRAVES ..... Los Angeles, Calif.
SUSANNE HIRT ..... Richmond, Va.
HARRIET S. LEE ..... Washington, D. C.
MARY E. NESBITT ..... Boston, Mass.

Advisory Council

AMOS CHRISTIE, M.D. ..... Nashville, Tenn.
WILLIAM T. GREEN, M.D. ..... Boston, Mass.
CHARLES C. LETOURNEAU, M.D. .... Chicago, Ill.
RAOUL PSAKI, LT. COL., MC San Francisco, Calif.
AURA E. SEVERINGHAUS, PH.D. .. New York, N.Y.
ARTHUR WATKINS, M.D. ..... Boston, Mass.

National Office Staff

Executive Director — Mildred Elson

CHAPTER-MEMBERSHIP SERVICES

Mary E. Haskell — Dorothy Voss

EDUCATIONAL SERVICES

Sarah Rogers

Helen Hickey — Elizabeth MacAuley

PROFESSIONAL SERVICES

Lucy Blair — Ruth Whittemore

Table of Contents:

Adaptations of Neuromuscular Facilitation Technics—Mary Jane Torp, Capt., AMSC, USA 577

Parkinson's Disease: Aspects of Functional Training—William Murray 587

A Useful Aid in Early Paraplegia Training—Robert J. Doman, M.D., and Glenn J. Doman 595

An Above-Knee Pylon with a Functional Knee Joint—Josef Hoog 598

Editorial 602

Association Activities 604

Annual Reports 606

Student Section 618

Physical Therapy Programs—1956 624

Abstracts 626

Book Reviews 629

Our Book Reviewers for September . . . 631

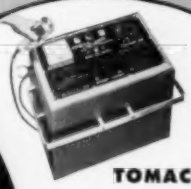
What's New 632

Index to Current Literature 634

Available in a Microfilm Edition

SEND FOR YOUR CATALOG OF Rehabilitation Products

Rehabilitation Products offers you the most complete variety of advanced equipment and supplies in the field—plus unequaled distribution and service facilities. So send for your helpful RP Catalog today!



TOMAC

Ultrasonic Generators

For inducing micro-cellular vibration. May be applied directly with mineral oil or under water. Frequency of oscillations remains constant—however, intensity of vibrations through quartz crystal can be varied. Unit is type approved by FCC. Approved by Underwriter Laboratories.

Electromatic Wheel Chair

Power driven, easily operated. Folds to 11½". Ideal for patients unable to propel wheel chairs. Operates and maneuvers with fingertip, foot, or chin controls, at speeds up to 5 MPH. Climbs 7° ramp. Brakes set automatically when power is off.

Porto-Lift

Effortless lifting of patients in prone or seated positions at the touch of simple hydraulic controls. Insures easy, safe, and comfortable movement from bed to wheel chair, automobile, and bath. 600 lbs. lifting capacity. Adjustable base width. One of many patient lifts in the RP Catalog.

Canes

Patients are assured of constant stability with the new "Ankle Action" Tripod Cane (at left). All three feet are kept in contact with the floor at all times by the flexible rubber mount.

Canadian Crutches (at right) Lightweight, but strong aluminum and easy to handle. Adjust from 28½" to 35". Hinged arm band. Also available in lightweight steel, flexible (but not hinged) arm band.

To receive your Rehabilitation Products Catalog, just complete and mail this coupon.

Rehabilitation Products

Division of American Hospital Supply Corporation
Department
2020 Ridge Avenue, Evanston, Illinois

Dear Sirs:
Please send me a copy of the Rehabilitation Products Catalog.

*Name*_____ *Title*_____

*Organization*_____
(Name of hospital, clinic, etc.)

*Department*_____

*Address*_____

*City and Zone*_____ *State*_____

THE BURDICK

UT-4 Ultrasonic Unit $395

This new addition to the Burdick line fulfills the busy practitioner's need for a compact, high-quality ultrasonic unit at a moderate price.

Weighing only 25 pounds, the Burdick UT-4 Ultrasonic unit has an effective maximum intensity of 2½ watts per sq. cm. and an irradiating surface of 6 sq. cm., with 15 watts total output. Complete unit measures only 9" x 12" x 16".

Its right-angle applicator assures ease and convenience, and the 6-foot flexible cable gives the operator ample freedom of movement. A Receptor switch permits pre-setting intensity before starting treatment.

Built in accordance with the recommendations of the American Standards Association, the UT-4 carries the approval or acceptance of F.C.C., Canadian Dept. Transport and Underwriters' Laboratories.

Ask your Burdick dealer for a demonstration in your office, or write us for information.

THE BURDICK CORPORATION — Burdick — MILTON, WISCONSIN

"Enjoy new rewards as an Army Physical Therapist.....

A career so important, you start as an officer!"

"Yes, when you serve your country as an Army physical therapist, you know that your life will be fuller, your career more complete. You know it because the Army makes you an officer—gives you the rank and prestige reserved for those with important jobs.

"It doesn't take long to find out just how important your job is. Working in a modern, well-equipped Army hospital, you'll soon feel the added satisfaction of playing your part to help your country as well as humanity.

"And with this greater responsibility come greater personal benefits, too. For one thing, you'll be surprised how your free rent, medical care and recreation allow you to save a tidy nest egg out of your officer's salary. You'll find it comes in mighty handy on that big 30-day paid vacation you get every year. And while you're waiting for your vacation to roll around, you'll enjoy the stimulating companionship of your fellow officers—professional men and women with interests just like yours.

"The Army really does offer you a fuller professional career, a more rewarding personal life. Why not send now for all the details on what an Army career can mean to you. You'll be glad you did."

SERVING HUMANITY, COUNTRY, SELF

The Surgeon General, United States Army
Washington 25, D. C.
Attn: Personnel Division

PS6-5

Please send me further information on my opportunities as a Physical Therapist in the U.S. Army.

Name _____

Address _____

City _____ State _____

My present status is (check one)

STUDENT:
___High School
___College
___Physical Therapist

GRADUATE:
___College
___Physical Therapist

OTHER:

ARMY MEDICAL SPECIALIST CORPS — U. S. ARMY MEDICAL SERVICE

Therapeutic Furniture and Equipment

DESIGNED BY BAILEY

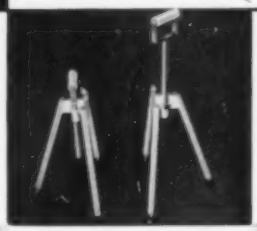
EXCLUSIVELY FOR JAY L. WARREN, INC.

Attractively and Therapeutically Designed With The Assistance of Many of the Nation's Foremost Doctors and Therapists

Bailey's Therapeutic Furniture establishes the correct posture—for "as the twig is bent, so the tree will grow."

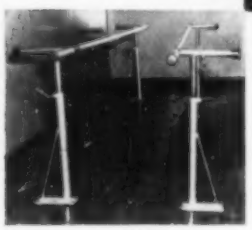
For Occupational and Physical Therapy, Speech Departments, Kindergarten Playrooms, Adult Rehabilitation and Home Care

The Bailey Tripod — Crab Crutch is a new and versatile ambulatory aid. Spade type hand grip is exactly centered above three legs for maximum stability. Made of light weight tubular steel. →



Bailey Relaxation Chairs are the complete answer to every seating problem of the Occupational, Speech and Physical Therapist. Full range adjustment of seat, foot board, back and tray positions. →

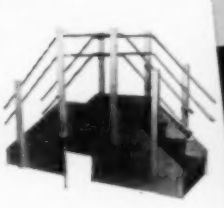
←



Bailey Parallel Bars contain every feature considered essential by leading authorities in the Physical Therapy field. Floor mounted types, semi-portable types and models for children.

Bailey Treatment Tables are extremely well constructed; are available in several models and can be had with or without storage shelves, drawers and adjustable back rests. ←

Bailey Safety Training Stairs provide a graduated training program from easy 4" steps to 10" steps. Absolute rigidity instills confidence. Exclusive safety features accelerate training progress. →



Write For Your Copy of the NEW Attractively Illustrated Catalog

Jay L. Warren, inc.

Tel.: EAstgate 7-5388

1247-49 W. BELMONT AVE. • CHICAGO 13, ILL.

MISS PHOEBE

NO. 8 IN A SERIES
SUGGESTED BY BOB DEYOUNG, DUBUQUE, IA

"...and the Prime Minister said if I do,
they'll re-name it Mt. Everest & *Jennings!*"

CONVENIENT E & J
DETACHABLE ARM MODEL

Like the peerless Himalayan peak,
Everest & Jennings stands for the very top.
For users the world over, E & J chairs
are outperforming and outlasting all others.
For patients young or old, tall or short, light or heavy—
There's an "exactly right" wheel chair at your
nearby Everest & Jennings Dealer.

There's a helpful E & J Dealer near you

EVEREST & JENNINGS, INC. LOS ANGELES 25

CARDIOSCOPE CS-3-5

CARDIOPHONE CP-3-6

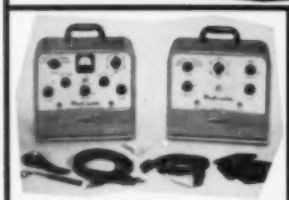
CARDIAC PACEMAKER CPM

CARDIAC DEFIBRILLATOR CD

Dallons *Complete line*

PHYSICAL MEDICINE and CARDIOLOGICAL Equipment

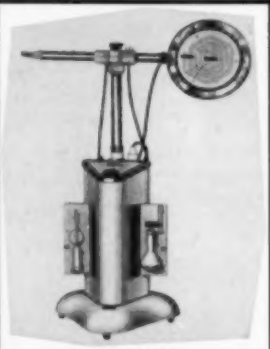
MEDI-SINE with GALVANISM 1400MG MEDI-SINE 1400M



MEDI-SONAR PORTABLE 1100

MEDI-SONAR CONSOLE 1050

MEDITHERM 1600



ULTRA VIOLET 600

Dallons respected for more than 25 years for their many valuable contributions to the science of physical medicine, is constantly increasing the number and scope of its products, making it possible to offer one of the most complete lines available.

All Dallons equipment is sold only through carefully selected franchised surgical supply dealers.

For descriptive literature write to manufacturer.

For the Best in Medical Electronics --Specify DALLONS

DALLONS LABORATORIES, INC.

5066 Santa Monica Blvd., Los Angeles 29, Calif.

Mail This Coupon TODAY!

Please mail FREE literature to: **ACL**

Name .....

Address .....

City ..... Zone..... State.....

I'm interested in .....

.....

.....

.....

My preferred Surgical Supply .....

.....

THREE NEW ITEMS

additions to the LaBerne line of Physical Therapy and Physical Medicine equipment

Intermediate Electric Walk-Off Table

A new model electric table designed to meet the budgets of small hospitals. This table is sturdily built of tubual steel and angle iron with lock casters, walnut finished hardwood top, restrainer straps and footboard. Has automatic cut-off switches for both up and down positions furnishing any degree of tilt from vertical to horizontal.

price $395.00

Also available with plastic covered foam rubber top $40.00 extra

Cervical traction attachment $25.00 extra

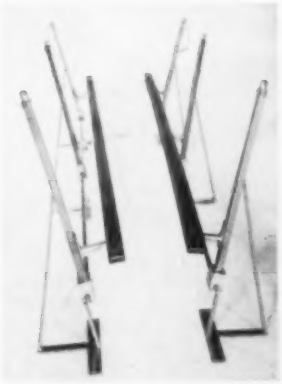
Same as above available in hand-operated model $225.00

Work Table

This table is built of tubular steel adjustable in height from 29" to 40". Has a formica top 22" x 30" adjustable to any position.

This table was designed at the request of many departments for use as a typewriter table, powder board, work table and drawing board for wheel chair patients.

price $145.00



LaBerne Parallel Bars

easy, adjustment, automatic spacing

New Parallel Bars requiring only 15" of floor space for each section. Built with 10° angle offering automatic width adjustment. Has height adjustment from 17" to 44".

Available in lengths from 18' to 30'. May be had with hardwood hand rails or with 1¼" round atactic bronze hand rails.

prices start at $295.00

All prices FOB Columbia, S. C.

La Berne Manufacturing Company, P. O. Box 5245,
Columbia, S. C. Phone 2-8609

ORIGINATORS OF THE "WALK-OFF" PHYSICAL THERAPY TABLE

Now... precise, repeatable, easily obtained results for...

electrodiagnosis and prognosis

of neuromuscular disorders

MODEL **CH-3**

VARIABLE PULSE GENERATOR and CHRONAXIE METER

new advanced electronic design • performs chronaxie tests • strength duration curves • other electrodiagnostic procedures!

In chronaxie tests, procedures are simplified . . . results are obtained with minimum instrument manipulation, through *automatic current-doubling*. All testing procedures are expedited . . . results are accurate, repeatable, meaningful. The new automatic constant current control circuit eliminates error due to variations in patient and electrode resistance. Also, peak output pulse current is constantly clearly indicated on a large meter to further facilitate electrodiagnosis. *For complete information, write:*

teca corporation

80 Main St. • White Plains, N. Y.

Enjoy a wealth of

INFORMATION

and new ideas . . . all yours

WITHOUT COST!

Write for Catalog PT

which pictures and describes our new, improved

SURGICAL and ORTHOPEDIC

APPLIANCES

for early training and

REHABILITATION

COSMEVO MFG. CO.

218 Paterson St., Paterson 1, N. J.

Georgia Warm Springs Foundation

GRADUATE COURSE

Physical Therapy and Occupational Therapy

This course is open to graduates of approved schools of physical and occupational therapy. Such graduates must be members of the American Physical Therapy Association and/or American Registry of Physical Therapists, or American Occupational Therapy Association.

ENTRANCE DATES: First Monday in January, April and October.

COURSE I—Emphasis on care of convalescent neuro-muscular disease with intensive training in functional anatomy, muscle testing, muscle reeducation and use of supportive and assistive apparatus. This course is complete in itself.

COURSE II—Three months duration with Course I prerequisite. Emphasis on care of severe chronic physical handicaps with intensive training in resumption of functional activity and use of adaptive apparatus.

IN-SERVICE TRAINING PROGRAM—Fifteen months duration at salary of $225 per month plus full maintenance, increasing to $250 per month at the completion of nine months. This program includes training in Course I and II.

TUITION: None. Maintenance is $100 per month. For scholarship to cover transportation and maintenance for Courses I and II, contact National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5, New York. (Scholarships require two years of experience.)

For further information contact:

Robert L. Bennett, M.D., Medical Director

Georgia Warm Springs Foundation

Warm Springs, Georgia

The makers of *Medcolator* proudly introduce the **3-WAY**

Medco-sonlator

OFFERING ELECTRICAL MUSCLE STIMULATION AND ULTRA-SOUND SIMULTANEOUSLY THROUGH A SINGLE* THREE-WAY APPLICATOR

AN IDEAL COMBINATION AS AN ADJUNCT THERAPY

THE VERY POPULAR *Medcolator* FOR ELECTRICAL MUSCLE STIMULATION and . . .

ULTRA-SOUND - - FOR MECHANICAL STIMULATION PRODUCING STRUCTURAL HEATING . . . ALL IN ONE COMPACT UNIT!

The decision to offer electrical muscle stimulation and ultra-sound therapy through a SINGLE applicator, is the not too dissimilar physiological paralleling of applications and indications.

TIMER OPERATES BOTH MEDCOLATOR AND ULTRA-SOUND. TREATMENTS MAY BE GIVEN SIMULTANEOUSLY OR INDIVIDUALLY.

F.C.C. Type Approval No. U-135

Licensed under U. S. Patents to A. T. & T. Company and Western Electric Company for Therapeutic Generators.

Available through your dealer. Write for COMPLETE information.

* An Indifferent Electrode is Required for Electrical Muscle Stimulation.

PATS. PEND.

MEDCO ELECTRONICS COMPANY, INC.
Division — Medco Products Co., Inc.
3607 EAST ADMIRAL PLACE • P. O. BOX 3275-P • TULSA, OKLA.

ILLE

ENGINEERED
for efficient,
economical service

Combination THERAPEUTIC TANK AND POOL, Model HM 1200 . . . A special stainless steel tank permitting a combination of passive and voluntary exercise with hydro and manual massage, while avoiding the necessity of attendant entering the water.

Combination ARM, LEG AND HIP TANK, Model HM 601 . . . Stationary, stainless steel unit for hydromassage and subaqua therapy. Water mixing valve is thermostatically controlled.

LITERATURE ON REQUEST

Hudgins MOBILE SITZ BATH, Model SB 100 . . . For hospital, clinic or office use . . . sturdy stainless steel and aluminum . . . easy to clean and assemble. Electric heater (optional) maintains temperature of solution.

ILLE ELECTRIC CORPORATION
50 MILL ROAD, FREEPORT, L. I., N. Y.

HYDROCOLLATOR

Steam PACK

MOIST HEAT

Now moist heat can be applied conveniently, effectively and with a minimum investment in equipment. No dripping, no wringing, no repeated applications. Each application gives at least 30 minutes effective moist heat. The Steam Pack is merely heated in water, wrapped in a towel, and applied. Standard equipment in leading hospitals and clinics across the nation.

DESCRIPTIVE MATERIAL ON REQUEST

CHATTANOOGA PHARMACAL CO., INC.
CHATTANOOGA 5, TENNESSEE

MASTER UNITS
Four all stainless steel models to meet the various requirements in hospitals, clinics, physicians' offices, and patients' homes. Automatically maintains Steam Packs in water at proper temperature — constantly ready for immediate use. No plumbing used.

D-3 2 Pack

E-1
4 Pack

SS — 6 Pack

M-2
12 Pack Mobile Unit

All the best features

OF MODERN SHORT-WAVE DIATHERMY

are yours in

LIEBEL-FLARSHEIM

diathermy units

COMPARE . . . and buy the best! Liebel-Flarsheim is the number one name in short-wave diathermy, and L-F precision-engineered diathermy units are in daily use by leading doctors, hospitals and institutions throughout the nation.

MODERN SHORT-WAVE DIATHERMY is the therapeutically sound modality that is *right* for every application where thermal therapy is indicated. L-F Frequency-Controlled Diathermy Units offer POWER A-PLENTY for any and all treatment demands, with UNPARALLELED FLEXIBILITY of application. You can treat ANY area—ALL areas efficiently, effectively with MAXIMUM PATIENT COMFORT and SATISFACTION. L-F Units successfully operate air-spaced plates as well as hinged treatment drum, utility applicator, etc. PROVED THERAPEUTICALLY EFFECTIVE, convenient, economical, safe. F.C.C. APPROVED, UNDERWRITERS LISTED.

L-F

MAIL THIS *today!*

LIEBEL-FLARSHEIM CO. PTR
Cincinnati 15, Ohio

Gentlemen: Please send me your latest 6-page brochure describing L-F Frequency-Controlled Diathermy Units. No obligation.

NAME _____

ADDRESS _____

CITY/STATE _____

prescribe CAMP

for immobilizing the lumbosacral region

When diagnosis indicates need for immobilization of the entire lumbosacral region, a Camp Authorized Dealer will provide your patient with an immediate, professional fitting of a Camp garment designed specifically for the job. Your patients have the assurance of comfort through superior construction, and economy through Camp's low prices.

CAMP
SUPPORTS APPLIANCES
JACKSON, MICHIGAN

Correlation of Basic Sciences with Kinesiology

APTA – OVR Institute Papers
April 1955

TABLE OF CONTENTS

Introduction:

What is Kinesiology?—Susanne Hirt, B.S.

I. Biomechanics

Part I. *Statics and Dynamics*—Herbert R. Lissner, M.S.

Part II. *Forces in Kinesiology*—Marian Williams, Ph.D.

II. Correlation of Anatomy and Physiology with Kinesiology

Part I. *Physiology*—Harry M. Hines, M.D.

Part II. *Anatomy of the Hand*—Joseph E. Markee, Ph.D.

Part III. *Coordination of Muscles in Action*—Roxie Morris, A.M.

III. Structure and Function of Intrinsic Muscles of Hand—Roxie Morris, A.M.

IV. Locomotion—Charles O. Bechtol, M.D.
Marian Williams, Ph.D.

For the Clinical Physical Therapist—
Serves as a refresher course; gives you another view on locomotion.

For the Teaching Physical Therapist—
Adds to your bibliography and sources of visual aids; helps you to clearer analyses and better understanding.

For the Student Physical Therapist—
Relates scientific aspects to clinical situations; serves as a useful source book.

Approximately 160 pp; numerous diagrams, photo-offset; hard cover; expected publication date September 25; price $4.50. Advance orders now being received.

American Physical Therapy Association
1790 Broadway • New York 19, New York

New (2nd) Edition

DANIELS

WILLIAMS

WORTHINGHAM

MUSCLE TESTING

Techniques of Manual Examination

By LUCILLE DANIELS, M.A., Associate Professor and Director of Physical Therapy, Department of Allied Medical Sciences, School of Medicine, Stanford University; MARIAN WILLIAMS, Ph.D., Assistant Professor of Physical Therapy, Stanford University; and CATHERINE WORTHINGHAM, Ph.D., Director of Professional Education, The National Foundation for Infantile Paralysis, Inc. 176 pages, 8" x 10¾". 346 illustrations. $4.00. *New (2nd) Edition.*

This *New (2nd) Edition*, ideal reference for physical therapists, describes step-by-step techniques of manual muscle examination for all regions of the body and tells how to determine degree of weakness resulting from disease, injury or disuse.

Here is clear understandable topography of muscles—including function, nerve supply, origins and insertions. 346 diagrammatic line drawings aid in testing each muscle group action; also in classifying and evaluating muscle strength as good, fair or poor in terms of the patient's accomplishments.

The physical therapist will find this new edition up-to-date in every aspect. A completely new section has been added on testing facial muscles. A resume of the anatomy necessary to an understanding of the test accompanies each procedure. Anatomical drawings are revised throughout to show additional structural detail. A new easier-to-use examination sheet is included. You'll find revisions made in tests for trunk muscles. In addition, certain tests for muscles of the extremities have been regrouped for clarity.

This manual can be a vital factor in your goal of helping patients with muscle disabilities toward maximum recovery. Order your copy today!

ORDER NOW!

W. B. SAUNDERS Company: West Washington Square
Philadelphia 5

Please send me: ☐ Remittance enclosed ☐ Bill me
Daniels, Williams and Worthingham: MUSCLE TESTING $4.00

Name .....

Address .....

PTR-9-56

Custom Made

CEREBRAL PALSY

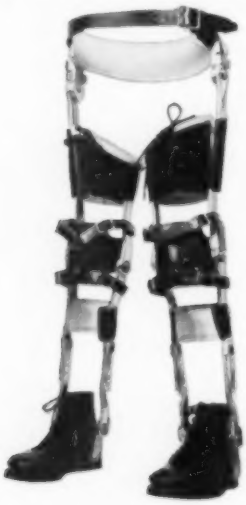
CONTROL BRACES

BY THE

C. D. DENISON

ORTHOPAEDIC APPLIANCE CORP.

(Ortho. Appl. Atlas—Pages 521-535)



To Obtain
DENISON'S C. P. BRACES
Ask Your Local Orthopaedic
Appliance Representative

In areas where Representatives
are not available, please
contact us direct

TRAINING AIDS CATALOGUE
available on request.

220 West 28th Street
Baltimore 11, Maryland

Do Your Share to Recruit Students 1956-57

Recruitment is the obligation of every physical therapist, not only the Recruitment Chairman. Plan now to do your share in your local area during the 1956-57 school year.

Check this list of productive recruitment projects now and let your Recruitment Chairman know for which of the following activities you will volunteer. Everyone is needed!

Speeches

Make arrangements to talk (and distribute informational literature on physical therapy to hospital boards and auxliaries, your undergraduate college, civic, social and fraternal clubs, youth groups, religious organizations, health agencies, PTA's, racial clubs, farm groups and service clubs such as Rotarians, Altrusa, Kiwanis, Lions, Pilots and Soroptimists.

"Open house" in your hospital or treatment center

"Career days" in schools.

Make speeches, distribute literature and show films.

Distribute informational literature to your professional colleagues and co-workers, religious leaders, chairmen of local service and health groups, local doctors, dentists and other professional personnel in the medical field and schools.

Radio and TV public service or women's programs.

Spot announcements (visual or visual and spoken), interviews, panel discussions, demonstration shows and quiz and audience participation programs.

Displays and exhibits.

Tie-in displays with medical merchandise and drug displays.

Posters and leaflets in women's club lounges

Literature in local physicians' lounges

Exhibits in libraries, schools, hospitals, health agencies and at PTA meetings.

Everytime you talk about physical therapy you are indirectly recruiting students. Be proud of your profession . . . talk about it! Help it grow!

Second Congress Souvenir

A limited supply of the Second Congress Souvenir—a sterling silver paper opener and book mark combined—is available in the National Office. Price $1.50. For those who could not attend, it is a memento of a historic event.

Equipment and Technic are Inseparable

The TECHNIC You USE
IS The Technic
Your Equipment
ALLOWS You To Use

TERRY-TABLES

ALLOW

Modern Technic

"Your PERSONAL TABLE" . . .
designed FOR This Century's Use . . . NOT, The Last

Through Your Dealer or Order Direct From

PHYSICAL THERAPY EQUIPMENT INC.

1706 Geddes Ave.,
ANN ARBOR, MICHIGAN

Just Published!

Knott & Voss'
PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION

Patterns and Techniques
. . . with a preface by Sedgwick Mead, M.D.

THIS HELPFUL and profusely illustrated manual makes available the basic information necessary to learn the techniques of proprioceptive neuromuscular facilitation. Shows you in practical and easy-to-learn steps . . . the basic motions, the approach to the subject, manual contact, timing and use of carefully controlled power. All physical therapists will find that this book opens new horizons in practice.

By MARGARET KNOTT, *Head Physical Therapist, and* DOROTHY E. VOSS, *Assistant Head Physical Therapist, Calif. Rehabilitation Center, Vallejo, Calif. 135 pages, profusely illustrated. $5.50*

Mail This Coupon

PAUL B. HOEBER, INC.
Medical Book Department of Harper & Brothers
49 East 33rd Street, New York 16, N.Y.

Gentlemen:
Please send me PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION *On Approval.* Within 30 days I will remit $5.50 or return the book.

Name.....

Address.....

City..... Zone..... State.....

PTR—9-56

August 4, 1956—At the Beach (or the "shore" as Easterners have it).

RANDOM NOTES

This is my vacation—which according to my lights is best achieved very few miles from home (not more than an hour away) spent loafing, snoozing, mild fishing, swimming, a few rubbers of bridge, good food, a limitation on shaving to once daily, old clothes, a few casual meetings with friends and a few books.

Speaking of books, try "A Paris Surgeon's Story" by Dr. Charles F. Bove. This is the tale of an American who served for twenty-one years as chief surgeon of the American hospital in Paris. There was much about the hospital; people, from kings and queens to movie stars, prostitutes, beggars, and almost such ilk as physical therapy equipment makers. His story of the German occupation of World War II, his surgery in amazing places and circumstances on refugees and soldiers, and his eventual escape to Spain, Portugal and America is a gripping but warmly human narrative. This book, published by Little, Brown & Day, Boston, is a "must" for you and me. For those of us working in daily contact with the medical profession I think it is essential that we devour every such book, that we may better know every facet of medicine and the ennobled people in it who receive homage from high dignitaries, yet who greet each day with humility. Dr. Bove would be a grand man to know.

Speaking of people, a few weeks after the PT meeting in New York, Dr. Zarina Fazelbhoy, Dermatologist, and her husband, Akbar, Birtcher distributor in Pakistan, graced California with a visit. We had cocktails at my home then repaired to the Pasadena Sheraton-Huntington Hotel for dinner, dancing on a moonlit terrace, winding up the small hours at my home playing with my collection of high fi jazz records, with which subject these people were intimately acquainted. My wife and I were enchanted with these lovely people. We learned much about politics, medicine, business, and of the people in India and Pakistan, and as far as I am concerned these two vibrant, informed, friendly people, as unofficial embassies to this country, were worth a train load of official diplomats. I am sure that many of you who met the Fazelbhoys at your June meeting in New York can appreciate my delight in having them exclusively to myself for eight or nine hours.

——0——

Many physical therapists have now had one to four years' experience with daily use of Ultrasonic therapy with perhaps hundreds of cases. I've seen published papers by the score by doctors of every classification and by trainers of athletic teams, veterinarians and physicists. Why not a paper by you and you? Simply write up individual cases or list clinical results—add treatment data such as dosage, number of treatments, kind of diseases treated, successes, or of simply symptomatic relief. Add a bit in the way of personal observations and opinions simply as the salt and pepper to season what might be otherwise a dry dish. I'll endeavor to assist you in getting your article published if you can't manage it on your own. How about it? I'd like to hear from you.

Cordially,

Cecil Birtcher

C. J. Birtcher, President
The Birtcher Corporation

Birtcher
WORLD'S LARGEST VOLUME PRODUCER OF ELECTRO-MEDICAL-SURGICAL DEVICES
4371 Valley Boulevard, Los Angeles 32, California

The Physical Therapy Review

Official Publication of The American Physical Therapy Association

Vol. 36 September 1956 Number 9

Adaptations of Neuromuscular Facilitation Technics

Mary Jane Torp, Capt., AMSC, USA

Technics are tools. Just as the modern craftsman has a workshop equipped with new devices, so, too, the physical therapist has been presented with many advanced methods to supplement the standard tools of treatment. The neuromuscular facilitation technics are some of these additions to the physical therapist's kit, but their versatility of application is frequently overlooked. They are more than just heavy artillery to be brought up when combatting certain types of disability. Ways in which they can be helpful to many treatment programs are presented herein, together with a brief description of the technics. Neuromuscular facilitation technics evolved from a gradual fusing of certain exercise elements found to facilitate muscle action. Until 1950, when isometrical rhythmic stabilization and mass patterns took over the focus of attention, these basic reinforcements of voluntary function were used with much success both singly and in simple combinations. This article will be concerned, for the most part, with these elementary forms of the technics in use prior to June 1950. Should further material be desired on fundamentals and principles of neuromuscular facilitation technics the reader is referred to the writings of Kabat, Knott, and Huddleston.

Chief, Physical Therapy Section, U.S. Army Hospital, Fort Rucker, Alabama.

Captain Torp was employed at Kabat-Kaiser Institute, Washington, D. C., from June 1948 to June 1950. This paper is based on work done by Captain Torp during her work with United Nations patients at the Tokyo Army Hospital, September 1951 to March 1954, for which she was awarded the Bronze Star Medal.

I. Foundations of Facilitation

Maximal Activation

The keystone of the technics is maximal activation. This entails disregarding fatigue as much as possible and working for endurance to lengthen duration of efferent nerve impulse bombardment by holding muscle contractions against resistance. Continual verbal, visual, and tactile stimulation are frequently involved. Disregarding fatigue means physical therapist fatigue as well as patient fatigue. Much fatigue can be avoided by utilization of supervised gym exercise relieving the physical therapist of all but the essentials of reeducation while the patient assumes early responsibility for much of his own program. A seemingly minor application includes maintaining resistance on eccentric as well as concentric motion. This is in contrast to the usual practice of the patient performing only the concentric, or shortening function, the physical therapist then taking the limb back into position for the next contraction.

Resistance

Resistance in the facilitation program is used as often to stimulate action as to build muscle

Figure 1. Resistance at elbow reinforces action of weak distal muscle groups in the patterns.

power. Resistance can induce motion along a desired pathway, not by preventing digression from that path, but by providing a beacon of pressure toward which effort will be directed by reacting muscle groups. The physical therapist uses this stimulating pressure to control precisely the direction of action, at the same time giving differing amounts of resistance to various segments of the limb being exercised. Channeling most of the resistance past the weaker portions into the stronger components of the pattern of motion permits less speed and movement in some segments. This results in controlled overflow, with stronger components reinforcing action of the weaker components of the pattern. (See Fig. 1.)

Learning to use resistance is frequently neglected, as are many fundamentals, in the haste to learn such advanced technics as isometrical rhythmic stabilization. Success is dependent on being able to blend together resistance-centered skills including the abilities to feel the response of each muscle in a pattern, to "milk" response from the muscle, and to adjust to the slightest change in muscle strength even though several joints participate in the movement.

It is difficult at first to use resistance properly against weakness. For example, when working on kneeling balance with a hemiplegic patient, who keeps most of his weight on the good leg and leans toward the unaffected side, the natural tendency is to push the patient toward the weak side as one would attempt to correct the lean of a fence post. This push toward the weak side, however, brings in more action of the good muscles and little from the weaker muscles. If the patient is pushed even farther off-balance, (the physical therapist pushing against the weak side just enough so that some response is encouraged but not enough to over-balance the patient), the weaker muscles will be stimulated into action.

BASIC REINFORCEMENTS

Proprioceptive mechanisms used in initiating or sustaining voluntary contraction in a muscle or muscles are:

a) **Primitive postural mechanisms.** Many muscles are better innervated to work against gravity. The hemiplegic's biceps acts more strongly when the patient is erect, just as the triceps initially comes into action best in the position illustrated in figure 2-A.

b) **Pressure stimulation.** Placement of the hand can stimulate action as in figure 2-B. This is a factor to watch for when stimulation is not desired; in the illustrated position, for instance, flexor activity would be inhibited.

c) **Stretch position.** The use of the stretch range to take advantage of the greater power

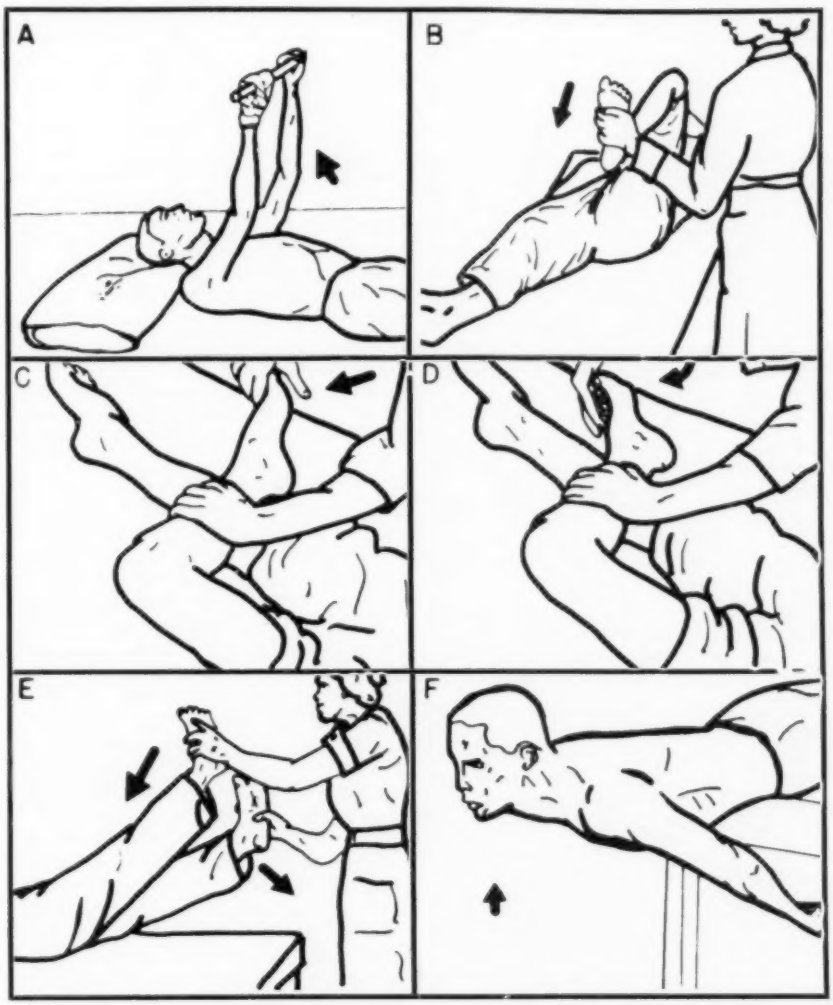


Figure 2. Basic reinforcements may be used singly or in combination.

A. Primitive postural mechanisms make triceps stronger initially in this anti-gravity position. Symmetrical motion of the opposite side adds to the facilitation.

B. The hand against the sole of the foot gives pressure stimulation to the extensors, also reinforced initially by the stretch position.

C. The most favorable part of the range from which to start activity is illustrated in the cross-leg position by the shortened or stretch range of the peroneals.

D. The lengthened and weaker portion of the peroneal range is seen. Toe extensors aid peroneal function in this position by synergist reinforcement.

E. Hip abduction is being primed by gluteus medius's secondary functions of hip extension and external rotation. Symmetrical motion of the opposite side and stretch reinforcements are also used.

F. The most favorable position for hip extension in this case includes all reinforcements except pressure stimulation.

usually present in this part of the range and to aid build-up of strength in a weaker part of the range can be found portrayed in figures 2-B and 2-C.

Working from the most favorable part of the active range toward the weaker innervated portion. The most favorable part of the range varies, but is usually the extreme shortened or lengthened range of the muscle. In figure 2-C the most favorable portion of the peroneal range is observed, leading to the weaker portion of the range in figure 2-D. The full range of motion need not be used; the active contraction is played like a fish on a line, working outward as the strength increases and back as it decreases.

Utilization of synergist innervation by stimulating the synergists, then actively preventing use of synergists in order to take advantage of their "frustrated" impulses. In this manner energy can be redeployed, or caused to overflow usefully, from biceps to pectorals or finger flexors to wrist flexors. Figures 2-C and D illustrate this principle using quadriceps and toe extensors to reinforce peroneal action.

Priming with a secondary function of a muscle group. As an example, plantar flexion may be resisted to elicit response from an inert peroneal, then the resistance may be subtly changed to eversion, eventually to stimulate the peroneals for eversion. Figure 2-E illustrates the priming principle.

Utilization of the most favorable position sometimes involves other reinforcements. It can mean use of a stretch, antigravity, or off-balance position, or a combination of these as in figure 2-F.

Symmetrical motion of the opposite side is particularly useful when adapting exercises to self-help gymnasium routines. Figures 2-A, 2-E and 2-F incorporate its use.

ADVANCED AND INTEGRATED TECHNICS

Patterns of motion

Patterned movement in this interpretation can involve either gross patterns or mass patterns. Gross pattern indicates the patient's usual (whether normal or abnormal) combination of movements performed when moving a limb in one direction. Mass pattern implies a prescribed combination of movements, designed to correct undesirable features of the gross pattern. Many pattern variations are possible. A pattern learned most readily, the gross pattern, usually is used to initiate immediate activity, often being the only key with which more desired action can be unlocked. The physical therapist then stresses corrective or mass patterns as soon as possible to alleviate or eliminate weaknesses, thereby improving gaits and postures. The change from gross pattern to mass patterned motion usually requires only adjustment in the diagonal direction, rotation direction, change from inversion to eversion, or pronation to supination.

Mass patterns for the elbow extended position of the upper extremity are diagrammed in figure 3. Patterns can be performed with elbow or knee flexion or extension, or with the elbow or knee fixed at some part of the range. The terms "lift" and "thrust" may be applied to patterned movement. Lift designates an upward movement of the extremity while thrust denotes a downward direction to the motion. In differentiating between diagonal directions the terms medial and lateral may be added. Most patterned movements include elbow or knee flexion, so it may be convenient to add information concerning elbow or knee position only if flexion does not occur. Medial lift of the lower extremity, then, would indicate that the knee was lifted in flexion toward the opposite shoulder. Ordinarily there is no need for further descriptive additions as other components of the mass pattern change automatically in accordance with other movements. Adduction of the lower extremity usually calls for external rotation and inversion, abduction for internal rotation and eversion, regardless of whether the extremity is flexed or extended. Upper extremity flexion, in both abduction and adduction, combines with external rotation and supination; extension combines with internal rotation and pronation.

The patient, when taking the knee toward the chest, could use a gross pattern of hip and knee flexion, hip outward rotation and abduction, ankle dorsiflexion and inversion. The mass patterns correcting this could be hip and knee flexion, hip inward rotation and abduction, ankle dorsiflexion and eversion, and toe extension, or flexion pattern of hip and knee flexion, hip outward rotation and adduction, ankle dorsiflexion and inversion, and toe extension. In all probability the physical therapist would use both corrective patterns.

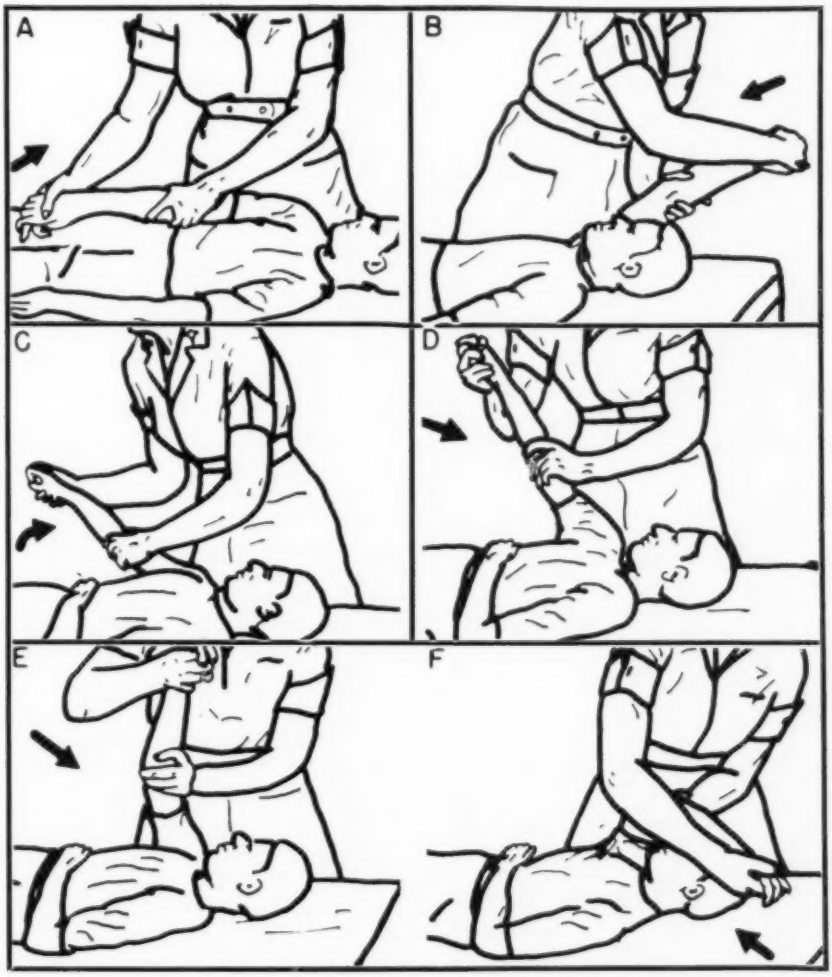


Figure 3. Mass patterns for the upper extremity with elbow extended.

A. Beginning position for lateral lift.

B. Beginning position for medial thrust.

C. Beginning position for medial lift.

D. and E. Spiral motion involved in pattern work may be seen in this portion of the medial lift.

F. Final position for medial lift and initial position for lateral thrust are illustrated.

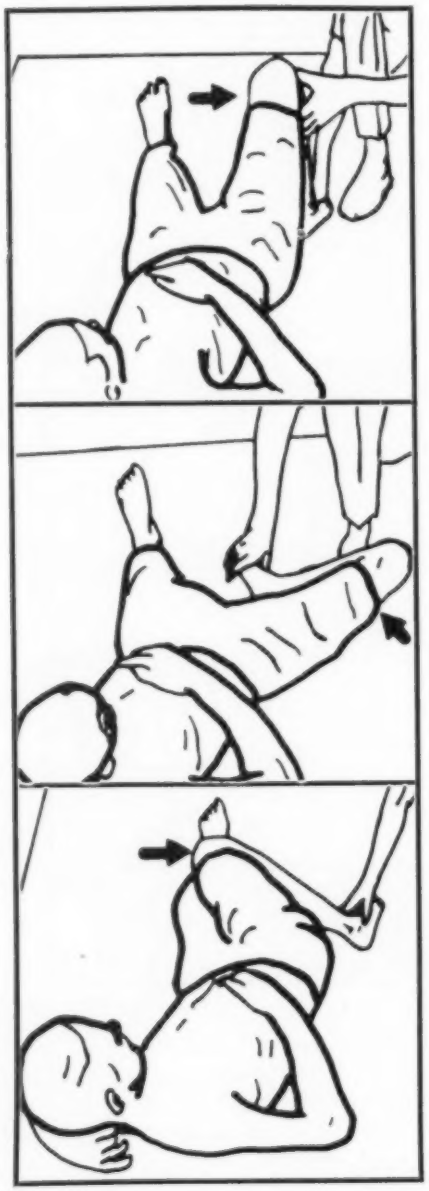


Figure 4. Knee balancing is a simple exercise used to stimulate trunk and lower extremity activity.

Rhythmic stabilization

Isometrical rhythmic stabilization consists of alternating isometric contractions of antagonists to a climax, followed by a maximal isotonic contraction of the agonist. (During an isometric contraction, or hold, tension on the muscle varies while the muscle length remains constant. In an isotonic contraction the muscle length changes.) Stabilization without succeeding isotonic contraction, is valuable in functional positions such as sitting, kneeling, and standing. Resistance in these positions may be diagonal, anterior-posterior, lateral, or rotary. Head, hips, or shoulders may be used as points from which to apply pressure, depending on the degree of weakness present in various body segments.

Reversal of antagonists

Many physical therapists unknowingly use this tool. It may be of aid when an increase in muscle power is desired, if greater strength is present in the antagonist than the agonist. It consists of maximal contraction of the antagonist reinforcing an immediately succeeding contraction of the weaker muscle. Reversals may be performed with varying speeds and combinations of isotonic and isometric contractions.

a) **Quick reversal.** This consists of a slow isotonic contraction of the antagonist followed by a quickly achieved isometric contraction of the agonist. It may be used for working on control throughout the range of a muscle or muscle groups.

b) **Slow reversal.** There are many cases in which the agonist is too strong to permit effective use of quick reversal. Slow reversal technic was developed for working with such cases. It consists of slowly achieved isotonic contraction of the antagonist followed by a slow isotonic contraction of the agonist. A variation of this technic was used in the reeducation of Patient A, to be described in a later portion of this article.

Top. Neutral or balanced position.

Center. Abducted position.

Bottom. Adducted position.

II. Utilization

GENERAL UTILIZATION

Controlling substitution

Resistance begets resistance. Prevention of the impulse to substitute will not be guaranteed by restricting motion of the part. Frequently it causes the offending muscle to struggle more strongly against the resistance. With the use of facilitation technics, the limb is taken into a position in which the obtrusive muscle is least effective. A good response from the weaker muscle is obtained, then a gradual moving back into the desired range is effected. The beginning position for this maneuver is usually in the shortened range of the substituting muscle, where it has the least mechanical advantage. Substitution by peroneus longus for the gastrocnemius, may be avoided by taking the foot into extreme eversion before plantar flexion is initiated.

Increasing passive range of joint motion

Indiscriminate passive assistance in many cases defeats its purpose by resulting in increased spasm. Range can be more easily and painlessly attained by active means. A series of alternating contractions of agonist and antagonist, progressing toward the limited portion of the range, may be used. Isometric contractions are preferable when working with the arthritic, while central nervous system lesions respond to isotonic contractions. Frequently relaxation of a muscle can be most effectively induced by contraction of only the antagonist, reinforced by facilitation technics.

The methods used on a paraplegic patient who was recovering function combined reinforced antagonistic contractions with passive assistance. Hip flexors were relaxed by hip extensor contractions, using the stool exercise illustrated in figure 5—bottom. (Push-ups can sometimes be similarly employed.) Following several repetitions the patient assumed the prone position and the hip flexors yielded to passive assistance. Dorsiflexion of an ankle with spastic plantar flexors was encouraged by using symmetrical stimulation, pressure on the dorsum of the foot, by slightly preventing toe extension, and with stretch reinforcement at the start of each contraction. A rhythm was established in a series of about 10 contractions. Symmetrical stimulation was stopped and, without a break in the rhythm,

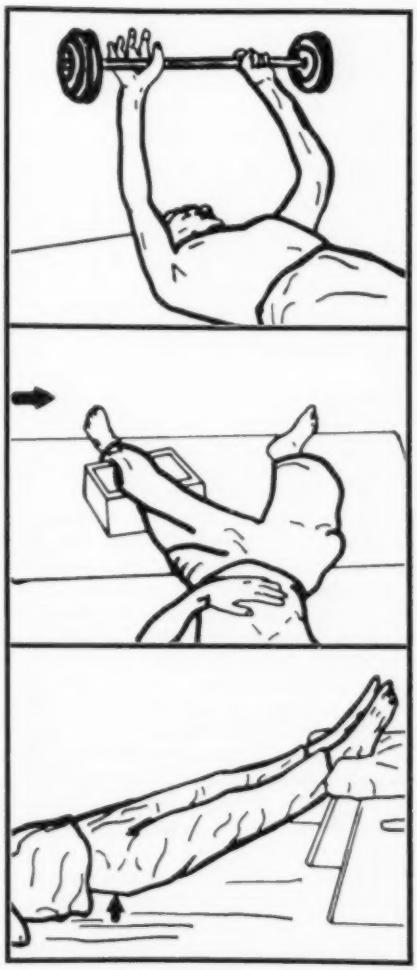


Figure 5. Some self-help activities.

Top. Weight lifting used to stimulate finger flexion.

Center. Ball bearings fitted under the box aid early use of the "scooter board" for strengthening lateral stabilizers of hip and trunk.

Bottom. Hip raising may be done with stool nearer the knees when concentrating on hip extension rather than total lower extremity extension.

passive assistance was applied at the peak of each contraction of dorsiflexors. After neutral range was obtained actively, a series of unlimited passive stretches could be given with ease to the plantar flexors.

Stimulating kinesthetic sensation

Muscle awareness is more readily achieved by active performance than by thought alone. When a guiding thumb was placed at the base of the fifth toe of a patient whose peroneus longus substituted for the gastrocnemius, he exclaimed, "It's so *easy* this way." One finger held under the toes to permit the toes to grip can help to eliminate, in similar fashion, toe extensor substitution for tibialis anticus.

Muscle testing

The positions used in muscle testing are not likely to be the positions in which patients have the most awareness of muscle function. These positions have been developed specifically to isolate muscle function and inform the physical therapist of the presence or absence of certain muscles. These less natural positions cannot be expected to facilitate muscle awareness. Proprioceptive stimulation, though not always recognized as such, has been used for many years to help the patient feel what he must do with his muscles in test positions. Pressure stimulation, stretch reinforcement, and symmetrical stimulation of the opposite side have been the technics most commonly employed for this purpose. Reversals are among other of the technics that can be helpful in stimulating awareness.

Stabilization and reversal technics can build up response so that trace function can become measureably apparent. Poliomyelitis patients and those with peripheral nerve injuries of long duration have been known to respond to these technics. The application of resistance in the shortened range in pattern-reinforced muscle is another useful technic which can be called upon to supplement electrical devices for both testing and reeducation. For instance, with knee and hip flexed, hip flexors strongly resisted, a slightly resisted tibialis anticus will often contract in hysterical and functional paralysis patients. When reinforcements are used in finding and confirming function the specific method used should be recorded to avoid the physical therapist's gaining a reputation for overoptimism.

SPECIFIC UTILIZATION

Peripheral nerve injury

A case is cited in which stabilization, resistance in pattern, and reversal technics were of use in both testing and reeducation:

> Patient A had a sciatic nerve injury of 8 years duration. He had discarded his drop-foot brace 6 years previously and walked with a high steppage gait. There was no apparent return of function below the level of the gastrocnemius. All muscles below the knee appeared markedly fibrosed. No electrical response could be elicited, not even from the gastrocnemius. The patient, standing barefoot, was gently pushed off-balance backwards and forwards, the physical therapist's hands at the patient's hip level. Toe extensors, then tibialis anticus appeared to function as stabilizers. Lateral stabilizing was tried and peroneals were similarly elicited. Immediately following this work-up with stabilizing, a response to prolonged galvanic stimulation was secured. (Faradic stimulation was not successful until the tenth day of treatment.) Treatment was given twice daily, consisting of whirlpool, electrical stimulation, and reeducation. The second day the tibialis anticus was elicited by strong resistance applied to hip flexors with the patient in a sitting position. The gastrocnemius, however, contracted automatically whenever the tibialis anticus commenced shortening in a knee extended position, due to stretch stimulus on the tight gastrocnemius. A reversal technic was found useful in counteracting this. The foot was held securely in dorsiflexion while a strong slow attempt at plantar flexion was called for. No plantar flexion was permitted by the therapist's resistance. Next, simultaneously with the command to dorsiflex, the physical therapist pulled the foot sharply into plantar flexion so that maximal stretch was exerted on the tibialis anticus as the gastrocnemius was placed in its least powerful position. The foot was allowed to slowly dorsiflex against resistance. A strong pull was maintained past the point where blocking had previously occurred. Isotonic contractions, both eccentric and concentric, were continued until the gastrocnemius took advantage of a break in rhythm. After a short rest the process was resumed.

Functional paralysis

A case is offered in which resistance in pattern was useful in both testing and reeducation:

> Patient B had a recent forearm wound and an apparent resulting median nerve injury with causalgia. Sensitivity prevented the completion of a reliable faradic check. One good response from the index finger flexor profundus was elicited with faradic current. Manually resisting and calling attention to the biceps and wrist flexors, at the same time giving slight resistance to the finger flexors in the shortening position, soon brought good finger flexion, then normal hand movement. The thumb did not require reeducation once the patient's "block" was overcome.

A case is quoted in which reinforcements were

not at first successful but subsequently proved of value in reeducation:

> Patient C had apparent sciatic nerve paralysis. No response could be elicited by reinforcement but faradic stimulation was successful. A second work-up with reinforcements, particularly rhythmic stabilization, revealed that the patient was not holding with any of his stronger muscles long enough to cause overflow into the inert muscles. This was possibly caused by weakness from long bed rest with serious wounds of the chest and thigh. An attempt at sitting up against resistance (the physical therapist holding the feet to bring in any stretch response) was rewarded with a flicker of tibialis anticus. Prone trunk extension exercise in a like manner revealed the gastrocnemius working well as a knee flexor though it gave no trace of response as a plantar flexor. The second day the patient stabilized with all muscles while standing. The third day he no longer needed the drop-foot brace as all muscles exhibited fair function.

Spinal cord injury

The early reeducation possible with facilitation technics is especially valuable to the spinal cord injured patient, who is apt to develop function-inhibiting spasm if muscle return follows its own course. Early activating and channelling of the first erratic muscle return can prevent much grotesque and uncontrollable reflex activity. It is particularly desirable to start reeducation of the quadriplegic patient before spasticity is evident in the lower extremities.

Reeducation at first must be aimed at securing activity. All patterns are then worked with. Particular emphasis on extensor thrust and hip abduction are usually desirable once activity has commenced. In general, patterns with knee extended tend to inhibit spasm while flexed knee patterns appear to encourage spastic activity. Reeducation, then, is commenced daily with smoothly progressive straight knee patterns stressing first abduction-adduction, and later flexion-extension, gradually working into the shortened position of flexion pattern when spasm is a problem.

There are times, as in the early flaccid stage, when spastic activity is desired. Sudden jerking movements in flexion, later to be avoided, then will be desirable as the movements most likely to produce activity. The knee balance exercise illustrated in figure 4, can be used for this purpose. With the patient supine, hip and knee flexed, the foot is propped against a pillow to keep the knee from extending. The patient attempts to balance the leg in this position, use of the trunk being permitted at first. The patient or physical therapist catches the leg before it deviates too far to either side. When used for activating purposes the physical therapist allows the leg to fall far out into abduction several times to stimulate stretch response from hip adductors. Extension thrust can frequently be elicited following this exercise. As the patient gains in activity more stress is placed on abduction or adduction in the balanced position. The patient with Crutchfield tongs in place will have more success with this and other lower extremity exercises if prism reading glasses are used so he can watch his legs and see day to day improvement.

Strengthening and coordinating should keep pace with returning motion as much as possible so that imbalance does not lead to uncontrollable spasm. This frequently requires several treatment periods a day of longer duration than usual during crucial weeks. Crawling activities, mat work for trunk-hip strengthening, parallel bar routines covering all phases of walking activities are particularly useful in overcoming spasm through increasing strength. These activities can be performed by the patient with a minimum of supervision and aid.

Warm-up exercises can make reeducation itself more effective. If a quadriplegic patient can start to lift his arm toward the ceiling, a small bag with a pound or more of weight can be hung on his gripless hand. The physical therapist may have to lift the arm at first if the patient has strength only to lower it. After a few days of increasing the number of lifts from 5 to 10 times or more, the patient may start showing more traces of finger and thumb motion during the reeducation period immediately following this warm-up routine. The same thing can be accomplished with patterned manual resistance but patients sometimes exert more effor if visible poundage is used. Figure 5—top illustrates use of heavy weight lifting for this purpose.

A case history illustrating the use of mat activities for a returning paraplegic patient follows:

> Patient D sustained a crushing injury wth contusion of the spinal cord at the level of T-10 and T-12. He also had chest injuries requiring a thoracotomy. Treatment commenced at 12 days post-trauma. By 50 days the patient was able to extend his legs against resistance of spring exercisers fitted with a stirrup. Further extensor strengthening was gained with the exercises illustrated in figure 5—bottom, in which the feet are placed on a stool and the hips repeatedly lifted from the mat. This exercise was especially good for relaxing hip flexor spasm. The "scooter board" exercise, seen in figure 5—center,

strengthened hip abductors and adductors; weight was placed in the box for resistance. Walking was started at 73 days, with hip-trunk stability appearing excellent. The following day, at the termination of treatment, he walked unaided in the parallel bars and several hundred feet using crutches with a four point gait.

Brain injury

The same technics useful in spinal cord injuries are of value in treating patients with brain injuries. Lesions due to causes other than trauma appear to respond to the same regimes followed by patients having traumatic lesions. Promptly and properly utilized, reeducation need have no deleterious effects, certainly not as much as ensues from the patient's tendency to give up, or from his frustrating attempts to move his own limbs. A program evolved from the treatment of several hundred brain injured patients will be outlined in a subsequent article.

BIBLIOGRAPHY

1. Kabat, H.: Studies on neuromuscular dysfunction, XI: new principles of neuromuscular reeducation. P. 111-23. Permanente Foundation Medical Bulletin, Vol. V, No. 3. (November 1947).
2. ———: Studies on neuromuscular dysfunction, XV: the role of central facilitation in restoration of motor function in paralysis. P. 521-33. Archives of Physical Medicine, 33:9. (September 1952).
3. ———, Knott, M.: Proprioceptive facilitation technics for treatment of paralysis. P. 53-64. Phys. Therapy Rev. 33:1. (January 1953).
4. Huddleston, O.L.: Principles of neuromuscular reeducation. P. 1396-8. J.A.M.A. 156 (15), (Dec. 1, 1954).

Rehabilitation Literature, 1950-1955

One of the first reference books of its kind on rehabilitation literature, compiled by the National Society for Crippled Children and Adults, will be published this fall, as announced by Dean W. Roberts, M.D., executive director of the Easter Seal Society.

Titled *Rehabilitation Literature, 1950-1955*, the book will be published by the Blakiston Division of McGraw-Hill Book Company, New York. It indexes and annotates 5,214 periodical articles, pamphlets and books relating to the medical care, education, employment, welfare, and psychology of handicapped children and adults. It features in one alphabetical listing by subject, references published in the six-year period, January, 1950, to December, 1955.

Compiled by Earl C. Graham, librarian of the National Society, and Mrs. Marjorie M. Mullen, assistant librarian, the book is prepared to help workers and students identify recent literature in their own field and then to enlarge their focus of interest to the entire rehabilitation problem and the cooperative efforts involved.

Dr. Roberts, who wrote the foreword, points out that the National Society has been continuously active in the training of professional workers, and this reference book is a distinct contribution to that program. He says:

"This reference work will have served its purpose if it will help those who look in its pages to find what is being done—and what is yet to be done—to help the handicapped; and what is known—and what is yet to be learned—to help the handicapped person make the best use of his potentialities."

When published, *Rehabilitation Literature, 1950-1955*, will continue to be supplemented by monthly issues of "Rehabilitation Literature; Selected Abstracts of Current Publications of Interest to Workers with the Handicapped," published by the National Society library since 1940 as the nationally recognized indexing and abstracting service.

The book will consist of approximately 750 pages and will sell for $9.00.

Activities of Daily Living Monograph Available

Rehabilitation Monograph X, Activities of Daily Living, Testing, Training and Equipment by Edith Buchwald Lawton, M.A., is a 59-page illustrated monograph recently published by the Institute of Physical Medicine and Rehabilitation of New York University-Bellevue Medical Center. Included are dressing, eating, ambulation and wheel chair activities that are necessary for the physically handicapped person to learn in order to achieve maximum physical independence. Copies of this monograph are available at $1.00 each from the Institute of Physical Medicine and Rehabilitation, 400 East 34th Street, New York 16, N. Y.

Parkinson's Disease:

Aspects of Functional Training

William Murray, M.A.

Introduction

The insiduous nature of the onset of Parkinson's disease has its parallel in the gradual development of patient dependency upon his family. Undeniably, in the early stages there are good grounds in some functional areas for the rendering of assistance to the patient. However upon investigation, it is all too frequently found that the patient comes to expect and eventually receives more aid than is either required or therapeutically desirable. The patient's dependent attitude often may spread rapidly to include activities that are not unduly difficult for him to carry out with reasonable efficiency.

On the other hand, family members themselves may, through misunderstanding, unjustly suspect the patient of "laziness" when he is unable to perform an activity which was adequately performed only hours earlier. Along with definitive care orientation of the patient and his family to the vicissitudes of his capacities is basic to the physical therapy regimen.

An almost universal trait among this patient group is the tendency to withdraw from social activity. Inability to get about easily, difficulty in projecting the voice, early fatigue, embarrassment over appearance, discomfort due to rigidity, tremors, and other intrinsic stimuli are some of the reasons for this withdrawal. The broad scope medical rehabilitation of these patients attempts to reverse or delay this tendency through the use of physical, medical, and psychological means.

Clinical Picture

There are several clinical manifestations of Parkinson's disease which are of particular interest to physical therapists. The patient presents a variable picture of muscular tremors and rigidity. The tremors are usually more apparent in the distal appendages and facial muscles. The rigidity is disseminated but appears to favor the flexor musculature. More often than not there is unilateral variation. When rigidity is present the degree varies with patient posture, activity, and emotional state. The same is true of the degree of tremorous activity. Other kinetic difficulties are also notably present. There may be akinesia in certain postures (the inability to produce movements in one or more body parts). The patient is aware of his muscle tensions and joint motions due to rigidity and tremor. These are disturbing and demoralizing phenomena to the patient.

The patient who presents a classical picture will stand with depressed and forward shoulders, nearly immobile face and neck, inwardly rotated shoulders, and flexed elbows and metacarpophalangeal joints. The wrist and interphalangeal joints are often more in extension than flexion. The dorsal spine is increased in its anterior concavity while the lumbar curve is flattened. The hips and knees are held slightly flexed while the ankle is resultantly mildy dorsiflexed. The lower extremities may be inwardly rotated at the hips or neutrally aligned; rarely is outward rotation of the hips a typical posture.

As the patient walks the stride length is shortened with noticeable shuffling or sliding of the feet upon the ground. This gait may persist or festination may develop due to an advancing line of gravity. However, retropulsion may also occur.

The etiologic factors producing Parkinson's disease have been ascribed to a poorly understood degenerative process involving the cells of the basal ganglia. This is called the senile, idiopathic, or genuine paralysis agitans type. The occurrence of the senile form is usually in the sixth decade of life.

Arteriosclerosis is commonly associated with Parkinson's disease and in this form the degeneration of cells in the basal ganglia presumably follows the reduced blood supply to these centers.

Other causes of this disease include lesions produced by infections, toxic chemicals and ne-

25 Fir Drive, New Hyde Park, L. I., New York.
Senior Physical Therapist, Long Island Jewish Hospital, New Hyde Park, New York.

oplasms. The disease is progressive in both the idiopathic and arteriosclerotic types. The rate of progress however, is variable and the disease may run a course of more than 30 years.

In general the idiopathic form of the disease progresses at a somewhat slower rate than the arteriosclerotic. The latter, because of its disseminated circulatory picture, may impose, in addition to motor dysfunction, intellectual deterioration and emotional aberrations. Death occurs due to an intercurrent illness encouraged by the reduced activity forced upon the patient by his disease.

TREATMENT

Drugs

Many drugs have been used to reduce the rigidity and tremor of these patients. The type of drug or combination of drugs and their dosage is prescribed for each patient by his physician. The patient's response to the drugs is evaluated by the physician and adjustments are made. The physical therapist should have adequate knowledge of the specific and side effects of these drugs in order to appraise patient performance and treatment activities.

Emotional adjustment

The psychological state of the patient is of utmost importance in achieving treatment goals. Inactivity and loss of motivation are quite typical of this patient group, and serve to intensify the motor deficits produced by the disease itself.

An optimistic and "keep plugging" attitude of the physical therapist is essential even when treating severely limited patients.

The effect of lability of psychological states upon motor capacity is remarkably demonstrated in the Parkinson patient. This factor is often responsible for precipitating or prolonging an exacerbation of symptons beyond their probable organic extent.

Characteristic factors

As a group, these patients have low energy reserves. The almost incessant involuntary hypertonicity of large muscle groups may account in part for this low fatigue threshold. This fatigue level should be studied early in the course of the disease in order that the patient's activities and treatment regimen may be outlined accordingly. Fatigue will be reflected by diminished motor power, incoordination, increased tremor, and often increased rigidity—all of which produce undesirable emotional overtones.

Other causes for lowered energy reserves include high temperatures, overdosage of drugs, the use of diuretics, and nutritional factors.

High temperatures are not well tolerated by these patients. Where the environmental temperature can be regulated, it should be. Clothing and bed coverings should be loosely applied and correlated with the patient's temperature tolerance.

When the physician prescribes new drugs for the patient or increases their potency, the patient is likely to experience a transient disturbance in motor efficiency. During this trial period the patient should indulge in only as much activity as is comfortably possible.

The patient who has congestive cardiac dysfunction requiring mercurial diuretics to alleviate a dependent edema may suffer a severe collapse in motor ability following their administration due to excessive salt loss. Reducing the patient's treatment activities or suspending them entirely for 24 to 48 hours at this time is indicated. Reassuring the patient that this reaction is temporary will assist him emotionally through this period of added motor limitations.

Periodically, and often with no apparent cause, the patient may experience a more or less dramatic decrement of motor ability. These "dips" may persist from 1 to 20 days. Each patient has a fairly consistent "dip period" and frequency of occurrence. When the patient's general medical state and drug schedule are reviewed and the possibilities of nociceptive stimuli and psychological depression are eliminated as causes, encouragement by the physician, physical therapist, and others becomes the remaining therapeutic agent of value along with an appropriate reduction in general energy expenditure.

The spatial position of the patient will affect the speed and vigor of his kinetic abilities. Notably depressing to motor ability is the supine position thus making self sufficiency in bed a difficult matter. The sitting position usually acts to inhibit forward flexion of the trunk which prevents easy rising from a chair. Other akinesias are found in these positions and the standing position. The physical therapist's role is to guide other areas of the patient's body to act and facilitate movement in the inhibited parts. Also, devising mechanical aids will often make the difference between the patient "going it alone" or calling for outside assistance.

Interestingly, the patient's voice is a reliable clue to his general temporal state. When, in greeting the patient, he responds with difficulty and lack of vocal volume, the therapist can quickly

adapt his approach to the patient's increased limitations and lower mental outlook. On the other hand, if the patient speaks with good volume and clarity, treatment may proceed at a higher level of activity.

PHYSICAL THERAPY

The aim of physical therapy in Parkinson's disease is to reduce the secondary changes at the musculo-skeletal level produced by the basal ganglia lesions. This is essentially the role played by drug therapy. Until such time as the development of more effective neurosurgical technics, these aforementioned symptomatic approaches will undoubtedly remain dominant for the majority of the patients.

Maintenance of soft tissue elasticity is basic to the physical therapy for Parkinson's disease. Contractures are an ever present obstacle to the patient's ability to perform movement. The presence of untreated progressive inelasticity may nullify or drastically reduce the effectiveness of drugs aimed at diminishing rigidity. Where the patient himself or with family assistance can carry out range of motion procedures, the physical therapist should outline a daily program for them. Very often homemade or inexpensive mechanical apparatus such as overhead pulleys in the patient's home will serve to maintain range of motion.

When rigidity is persistent and severe enough to produce local ischemic pain, heat and stroking massage often help to diminish the discomfort (if only temporarily), and raise the patient's morale. Very often one will see a patient with such discomfort present a picture of local akinesia all out of proportion to the degree of pain. It seems that even mild pain in these patients has an intense inhibitory effect upon motor activity and its presence deserves serious consideration.

The causes of muscle weakness in the Parkinson patient are often obscure. Testing the patient is difficult due to variability in his coordination at different times and in different postures. When observing the patient in functional endeavors, a muscle group performing below what is normally required may be empirically considered weak. Also a muscle which cannot overcome the resistance of its antagonistic group must be considered weak. These weaknesses are probably due to a combination of causes. The direct interruption of neural pathways due to the central nervous system lesions is probably a prominent cause. Secondary effects of lesions producing inhibition at nuclei and at the lower motor neuron account for a portion of this weakness. The overstretching of a muscle group by a hypertonic antagonist will promote weakness just as stretching by any outside mechanical factor. Deconditioning, or weakness produced by disuse of a muscle group, often plays a prominent role in this patient group.

Physical therapy measures employed include passive and active range of motion activities, strengthening exercises, functional activity training, neuromuscular reeducative technics and other less important supportive measures such as use of massage, heat and water.

The values of maintaining range of motion in patient care are well known. Adequate range of motion is basic to decreasing the resistance to muscular contraction and improving body mechanics, both of which are vital to improved functional ability. Depending upon the rate at which "stiffness" returns, range of motion activities are repeated regularly.

Exercises are performed in a specific manner and are aimed toward raising power levels of weakened muscle groups and the correction of imbalance between antagonistic groups. Specific exercises and other activities, must be graded according to the energy reserves of the individual patient. Exercises which have functional values are to be given priority. However, it is not always easy to decide what a functional exercise is. In one instance, a patient was given a trunk rotation and a lateral trunk flexion exercise to increase his range of trunk motions. Unexpectedly, he reported and demonstrated improved coordination between his limbs and trunk when arising from a bed or a deep cushioned chair. Formerly, the patient expressed a feeling of "separateness" of his limbs and trunk, which may be classified as a local akinesia in the supine posture. In another instance, bilateral shoulder elevation provided sufficient opposition to neck flexor rigidity so that the patient was able to sit with his head erect for longer periods of time.

GAIT PROBLEMS

Ambulation is often interfered with to a point where it is extremely fatiguing and may be dangerous to the safety of the patient. This can severely complicate the patient's self-care status. In many instances, training of the patient to walk with conscious effort on gait pattern can alter both the fatigue and danger elements.

The patient often demonstrates a pattern of ambulation which is deficient in the forward stride phase. The antagonistic muscle groups fail to relax sufficiently to permit the prime

movers and synergists to work with comparative freedom. This is the case with hip flexor motion. Almost immediately, therefore, the patient's line of gravity shifts forward toward the ball of the foot. The patient is then in a situation which requires him to move his limbs rapidly in an effort to keep up with his continuously advancing line of gravity.

Training the patient to perform a more lengthy stride is fundamental to the mitigation of festination and propulsions. Some technics employed to train the patient in striding with increased knee lift are as follows:

1) Measure off a floor distance of 15 to 25 feet depending upon the activity tolerance of the patient. Ask the patient to walk this distance. Without his knowledge, count the number of strides used. After the patient has walked the established distance, tell him how many steps he took. On subsequent "runs," encourage the patient to take longer steps by raising his knee higher and directing his heel forward so as to contact the floor well ahead of him. With conscious effort, many patients will halve the number of strides required originally. Repeat this activity regularly, but always stop before fatigue burdens the patient.
2) Place 4 to 8 wood blocks (approximately 2 inches by 4 inches by 12 inches) on the floor at intervals the distance of a full stride for either one or both limbs, as the problem indicates. Estimate of spacing may have to be adjusted but resist shortening the distance between blocks. Ask the patient to walk over the blocks carefully avoiding contact with them. Repeat and stop before fatigue occurs.
3) When the patient has successfully lengthened his stride, have him walk a convenient distance counting a cadence with his strides. This serves to focus his attention on his ambulation which improves the reciprocal relaxation of the antagonistic muscle groups and possibly facilitates the contractions of the prime movers and synergists.

While these technics may induce a notable improvement in the ambulation pattern, it must be remembered that this is made possible by virtue of conscious effort. So long as this attention can be maintained, ambulation is usually maintained on an improved level. The patient should be clearly aware of this if after-treatment carry-over is to be effective.

This improved gait pattern often is the solution to propulsive tendencies. However, if the patient's posture and/or neural mechanisms persist in producing propulsion, an additional technic may prove helpful. Have the patient place his hands behind his back and clasp them if possible. This shift of arm weight rearward also posturally extends the dorsal spine. Both tend to shift the patient's line of gravity posteriorly. This arm position is maintained throughout the ambulation activity. The endurance of the patient is usually increased by eliminating or reducing the propulsive tendency. The patient is less tense during the activity with decreased overflow tonicity into antagonistic and nonessential muscle groups.

The Parkinson patient who demonstrates a severe rigidity and/or "cog-wheel" pattern in striding may have to forego any practical use of the high knee lift striding. His gait usually reveals a peculiar forceful foot contact with the ground before sufficient stride length is attained. This force is often too great to be counteracted by high knee lifting. Here we must attempt to increase stride length within the low limit of knee lifting.

4) As in method #1 the patient makes a conscious effort to reduce the number of steps over a fixed distance. However, here he is encouraged to reach forward with each foot to a point as far ahead of him as his stability will tolerate. This "forced long-stride" gait may produce a faster rate of motion but it may obviate the tendency to a forward line of gravity.

Shoe adjustments

The bottom surface of the patient's shoes may ease or retard his ambulation efforts. Leather soles and heels will serve to lessen traction with the floor. When a patient is seen to profit from a slight movement following floor contact after a stride, reducing traction this way will be advantageous.

Because tension in the gastrocnemius-soleus group has caused these patients to ambulate with their heels not fully contacting the floor, a number of patients with festination will do surprisingly well with wedged heel risers. While one might expect this to throw the center of gravity further forward, some patients are relieved of this tendency. As the body weight is repeatedly transferred to a plantar flexed foot, the stretch augments the calf muscle tension. The raised heel reduces the stretch reflex upon the calf mus-

cles by permitting the body weight to be borne more fully by the calcaneus.

Initiation of the stride

Patients frequently have difficulty in intiating the walking pattern. Often the patient states that his feet feel as though they are "sticking" or are "frozen" to the floor. This is probably due to a suppression of neural stimulation to the muscles of ambulation via postural excitatory pathways. If the patient has not discovered a method which "triggers off" a stride, a search for one should be started. Some methods which have been fairly successful are described:

a) "Backward step" — Here the patient takes a short step backward with a preferred foot and shifts his weight onto this leg. He follows this quickly into a forward step with the same extremity, pushing his weight onto the fixed contralateral leg.
b) "Patella tap" — The patient bends downward to grasp or slap his anterior knee region. Upon rising to the erect position he attempts to stride forward.
c) "Lateral shift" — Simply forcing himself to shift his balance onto one lower extremity will free the opposite member to stride.
d) "Forward reach" — The patient swings his arm forward as though to grasp an object well ahead of him. This may serve to tip his line of gravity far enough ahead of him to facilitate the stride movement.

Turns

Turning about when standing is another classical difficulty. Here we attempt to develop in the patient a technic which is the easiest avenue for him to follow. The following points have pertinence in circumventing some of the difficulty of performing a turn:

a) "Delayed turn" — If the patient is standing quietly and intends to turn about, he should first get into the ambulation pattern straight ahead before working on a turning movement.
b) "Preferred leg outside" — The lesser affected of the lower extremities should be on the outer side of the turn. This places a lesser burden of striding upon the more affected extremity which serves somewhat as a pivot point.
c) "Widening the arc" — Usually the tighter the degree of the arc of the turn the more difficult it is for the patient. Patients who learn to plan a wider arc in an anticipated turn will manage with less difficulty.

Halts

A halt is the phenomenon of sudden involuntary stops in the walking progression. These may occur as a result of various circumstances such as anxiety, distractions, and other, often unknown, mental and physical states. The patient may characteristically halt before descending a flight of steps due to mild anxiety or he may halt five feet before reaching a chair he intends to sit in due to a reduction in concentration of the walking sequence. The approach to the problem of halts must be related to the cause when known or suspected.

a) "Anxiety" — When a physical situation is unrealistically felt to be dangerous, the patient must be encouraged to learn to disregard it as much as is possible.
b) "Distraction" — The patient may learn that focusing his attention on his walking will help avoid a number of halts daily. If he usually stops too far from a chair he should think of walking "through the chair" so that his ambulation will carry him to the seat of the chair.

When halts occur despite the patient's efforts, the re-initiation of ambulation is treated as an "initiation of stride" situation described earlier. As a rule, it is easier for the patient to re-initiate ambulation once he has been walking than after he has been seated or lying for some time.

Propulsions

Propulsion gaits are among the more demoralizing as well as frightening aspects of the patient's problems. To a greater or lesser extent they are amenable to correction.

The placement of hands behind back to move the patient's line of gravity posteriorly has already been mentioned.

In addition it may be helpful if the patient keep his head up.

As a prophylactic measure, the adequate stretching of the patient's hip flexors and anterior trunk fascia will enable him to assume a more upright posture and a concomitantly less advanced line of gravity.

While these aforementioned points have been beneficial in many cases, the problem is not always satisfactorily resolved. The basic neuromuscular deficits plus fatigue, emotional tensions, and limited response to drugs are occasionally too great to profit from reeducative technics.

BED

Moving from the supine position on a bed to the standing position is often troublesome to Parkinson patients. Even when a hand grip is provided, such as a "U" rope, many patients will still fail to come to a sitting position. The difficulty here involved includes the phenomenon of "positional inhibition" of power and coordination.

In resolving this problem of sitting up one must consider opposition offered by tight hamstring muscles which are usually present. To circumvent this, the patient should try to place his lower extremities off the edge of the mattress as much as possible.

Following this, the use of his arms in an overhead throw manner may be tried. This provides momentum to assist forward head and trunk raising which complete the sit up.

To expedite a rapid forward arm throw, the following points have been found to be of help:

a) the raising of the arms to the overhead "pre-throw" position should be followed suddenly by the "throw" movement itself;

b) the patient may improve the rapidity of the "pre-throw" and "throw" phases by one or two trial sequences of arm movements only;

c) the arms should reach as near an overhead position as can be attained and his elbows should be held relatively straight;

d) when the hands reach a point above the thighs in the "throw" phase, head-trunk forward raising should begin.

The most important element of this technic is dependent upon good range of shoulder joint motion and vigor of the shoulder muscles. Stretching and exercise activities should be directed toward this functional goal.

One patient who occasionally had difficulty with this technic was taught to thrust with his legs simultaneously with the arm "throw." The thrust was performed after both lower extremities were flexed at the hip and knee joints.

If the patient requires additional supportive measures for this activity, raising the upper half of the mattress or placing wood blocks under the legs of the head end of the bed may be considered. The former measure is less desirable since it encourages flexed position of the hips and spine.

A firm mattress and/or a bed board will provide a surface from which the patient can push in arising as well as in other bed movements.

Once the sitting up position is reached, the patient attempts to get foot-floor contact and stand up. If his bed level is too high he may have difficulty moving forward on the mattress to reach the floor with his feet. If the bed level is too low, greater power and range of trunk hip motion will be required to rise. Adjustment of the height of the bed to the person, when possible, must be considered.

CHAIR ACTIVITIES

The "positional inhibition" seen in bed positions appears to be present (although to a lesser degree) in arising from a chair or sitting position.

The three essential elements of posture before arising are:

a) a forward leaning trunk which places the shoulders above the knees,

b) hands placed (in armrest type chair) on armrests so that axis of forearm is nearly vertical,

c) both feet flat on floor and spread about 3 to 6 inches (feet should be as close to the chair as possible without losing heel-floor contact).

Usually only the milder cases can utilize this conventional method. Other patients will have difficulties with trunk flexion and hand placement.

Trunk rocking methods are of help:

a) "Simple" — The patient places hands on knees (for eventual pushing movement) and rocks trunk forward and backward once or twice. He follows this with a final vigorous forward trunk movement. The practice movements will facilitate the final forward movement. The hand and leg movements usually follow effectively if the trunk carries the center of gravity forward of the patient's ankles. The patient should be cautioned not to extend his trunk on his hips too soon or else this will cause a loss of balance backward.

b) "Arm throw" — As in the forward trunk rising from the bed described earlier, the arm throw will carry the trunk forward.

c) "Underswing" — When an armless chair is used some patients can arise by a forward swing of their arms in a pendulum-like motion.

The chair should be adapted to the patient.

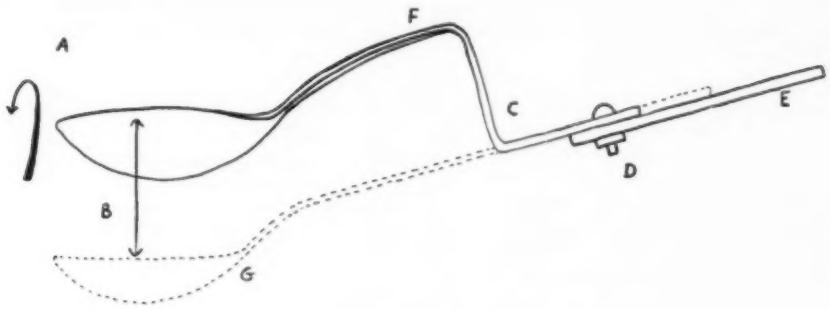


Figure 1.

A. Twist applied to neck of spoon making near edge higher.

B. Distance of gain in height due to bend at C.

C. Approximately right angle bend.

D. Nut and bolt for attaching extra handle also provides prominence for finger grasp.

E. Thick handle added to spoon handle.

F. Serves as convenient place to pick up spoon from table.

G. Standard spoon for comparison.

Raised rear legs encourage easier forward trunk motion. The seat should be comfortable but not overly soft. The fabric should be as smooth as practical, such as plastic or leather. As in the bed level, the height of the chair seat is important in enabling easier foot-floor contact.

In seating himself, the patient may end up in an oblique position on the chair. Readjusting his alignment on the seat is a laborious procedure. The following movements have been of value in seating activities. They result in slight, if any, need for shifting on the seat after the patient is seated:

a) Standing position — The patient should stand with his back to the chair and his legs in contact with edge of seat.

b) Descending — The patient must flex his trunk on his hips and reach with his hands toward his knees. While maintaining this flexed position, the knees bend and lower the patient to the seat.

The common fault in this method is that the patient fails to keep a flexed position until contact is made. A loss of balance backward results in a "fall" into the seat of the chair.

FEEDING

The essential skills in the feeding pattern are well known. The person must:

a) maintain a secure grip upon the utensil,

b) scoop or spear food in sufficient quantity onto the utensil,

c) raise the utensil with enough stability and vigor to bring it to his mouth,

d) angle the utensil so that it may be emptied,

e) return the utensil to plate.

Both rate and endurance in the execution of this pattern are to be considered along with the elements of motions listed above.

The patient with Parkinson's disease may be troubled by none, all, or some of these feeding pattern elements.

a) When the hand grip is a problem, the other elements must be considered secondary until this is resolved. An adjustment to the handle may prove successful. Making the handle thicker, adding a prominence to the surface of the handle (Fig. 1), or placing the handle into a finger or hand cuff are possibilities.

b) A dish with more vertically inclined sides can ease the patient's attempts to scoop food onto his spoon. A dish with raised sections on its bottom surface will help restrict food from sliding in the plate. The height of the table surface and the patient's sitting position may be causative factors in the patient's inability to scoop food well.

The use of the other hand with a flat pusher type object may also be considered to assist the feeding hand.

c) A severe tremor upon volitional effort will seriously hamper the patient's feeding of less solid type foods. Perhaps a more comfortable sitting position, including good foot-floor contact will reduce the amplitude and rate of the tremor.

The height to which the patient can raise the food laden utensil may be helped by an elbow rest at a suitable position. Adjusting the line of the handle will gain height indirectly in raising the utensil (Fig. 1).

The practice effect of attempting the feeding and receiving assistance in the movements at first has resulted in a successful performance at a later date.

d) When maintaining a level spoon is difficult to the point of spillage, twisting the handle of the spoon slightly may result in a more level position during its travel from plate to mouth (Fig. 1).

e) Returning the utensil to the plate is generally something of a lesser problem if the patient's sitting height and table top height are considered as in b.

The rate and endurance of the patient's feeding pattern will usually improve with the effect of practice. Motivational factors cannot be discounted; the patient should be in an optimal social situation (for the patient) to redevelop his skill.

Since feeding is highly dexterous motor function, the patient will frequently have difficult sessions, particularly at the beginning. He must receive encouragement and understanding during these periods.

SUMMARY

An attempt has been made to describe some of the characteristics of Parkinson's syndrome and to outline procedures for developing functional activities including walking, getting in and out of bed and chair, and feeding.

REFERENCES

1. Alpers, Bernard J.: Clinical Neurology, S.A. Davis., Philadelphia, Second Edition, 1950.
2. Brain, W. Russell: Diseases of the Nervous System, Oxford University Press, London, 1952.
3. Buchanan, Josephine: The patient—his evaluation and rehabilitation, Phys. Therapy Rev., Vol. 34, No. 1 (January) 1954.
4. Chrystal, M., Hoffnung, A., Barsky, M., and Roy, J. B.: Possibilities and limitations of rehabilitation procedures for paralysis agitans, Phys. Therapy Rev. Vol. 32, No. 3, (March) 1952.
5. Doshay, L. J.: Anterior choroidal surgery and geriatric parkinsonism, Geriatrics Vol. 9, No. 10, p. 479-83, (October) 1954.
6. Doshay, L. J.: Personal communication.
7. Leopold, Robert L: Patient-therapist relationship: psychological consideration, Phys. Therapy Rev. Vol. 34, No. 1, (January) 1954.
8. Merkin, Leon: Untoward effects of treatment with mercurial diuretics, New York State J. Med., Vol. 49, No. 20, (October 15) 1949.
9. Monroe, Robert T.: Diseases in Old Age, Howard University Press, 1951.
10. Murray, William: Functional training in geriatrics, Phys. Therapy Rev., Vol. 32, No. 9, (September) 1952.
11. Preventive Aspects of Chronic Disease: The Commission on Chronic Illness, Baltimore, Maryland, 1952.
12. Ralston, H. J.: Mechanics of voluntary muscle, Am. J. Phys. Med., Vol. 32, No. 3, (June) 1953.
13. Steiglitz, Edward J.: Geriatric Medicine, W. B. Saunders, 1949.
14. Therapeutic Notes: Vol. 56, No. 11, Parke, Davis and Co. 1949.
15. Therapeutic Notes: Vol. 59, No. 4, Parke, Davis and Co. 1952.
16. Yaskin, J. C.: Treatment of Parkinson's syndrome: some practical considerations (abstract), Pennsylvania M.J. 54:1156, (December) 1951.

Physical Therapy School at Ohio State University Approved

The curriculum in physical therapy at Ohio State University, Columbus, Ohio, was approved by the Council on Medical Education and Hospitals at its last meeting. Miss Gladys G. Woods is the Physical Therapy Director, and Dr. Ralph E. Worden, the Medical Director.

Coming Meetings

American Occupational Therapy Association—Nicollet Hotel, Minneapolis, Minn., Sept. 29 - Oct. 5, 1956.

National Society for Crippled Children and Adults—Hotel Statler, Washington, D. C., Oct. 28 - 31, 1956.

American Public Health Association—Convention Hall, Atlantic City, N. J., Nov. 12 - 16, 1956.

A Useful Aid in Early Paraplegia Training

Robert J. Doman, M.D., and Glenn J. Doman

The improvement during recent years in walking technics for the severely disabled, such as the paraplegic, has emphasized some obvious shortcomings of usual bracing methods. Careful thought and study have been given this subject by many widely separated rehabilitation workers but changes in bracing have been limited mainly to different locking devices and a search for lighter material. Many inadequacies are still present in bracing including the following:

1. The weight of braces is excessive.

2. Braces impose certain physical restraints upon functioning muscles.

3. Time is lost while braces are being made.

4. Initially, braces are expensive.

5. There is the necessity for frequent adjustments.

Due to all the reasons listed, a search was instituted at the Rehabilitation Center at Philadelphia for a temporary brace which would have the following qualifications:

1. light in weight,

2. inexepensive,

3. of universal fit not requiring exacting measurements for its use,

4. would not completely inhibit function,

5. could be ready made, to be used the first day gait activities were required. Such a device could be stocked in physical therapy departments,

6. would be adjustable to meet changes in function,

7. would provide enough support so that the patient would not collapse and yet permit enough movement so recovering muscle groups could function.

Dr. Robert J. Doman, Medical Director of The Rehabilitation Center at Philadelphia; Diplomate of the American Board of Physical Medicine and Rehabilitation; Assistant of Physical Medicine at the Veterans Administration, Philadelphia; Medical Director of the United Cerebral Palsy Association of Delaware County; and Chief of Physical Medicine at the Chester Hospital, Chester, Pa. Glenn J. Doman, Director of The Rehabilitation Center at Philadelphia.

Such a device would provide certain important advantages:

1. Patient could be mobilized without delay.

2. Where any possibility of future movement was present (incomplete transection of the cord) such movement could be utilized.

3. When the need for permanent bracing had been established the amount of bracing could be minimum.

4. Goals could be established as to the type of gait pattern before permanent braces were ordered.

The development of such a device required study, thought, time, and money. Many semi-rigid substances and new kinds of locks and joints were tried without success.

In September, 1955, a commercial splint was found which met all the requirements, although its original purpose was different. The splint was designed as an emergency device for untrained volunteer emergency crews. It was used by ambulance crews, ski rescue teams, and in industrial plants.

The Keystone Splint* answered the purpose with slight modifications. These were easily made and the splint was placed in use with good results. The splint is constructed of strong canvas and contains three long wooden battens and two short ones which are inserted in pockets and can be removed (Fig. 1). It fastens around the waist with a band and buckled straps and is then fastened around the leg with attached straps.

It was felt that in order to adapt this emergency splint as a rapid mobilization aid in recent paraplegias it would be necessary to prevent a recurvatum. This problem was solved by placing a soft rolled pad behind the knees before applying the splint in order to hold the knee slightly flexed. The waist band of one splint was fastened over the other. The double waist band permitted increased support where weak abdominals were present (Figs. 1 and 2).

* Manufactured by the Horn Surgical Company, Philadelphia, Pa.

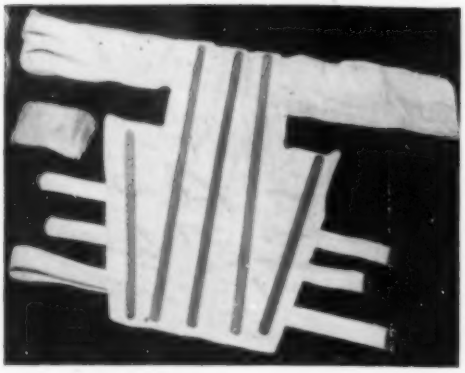


Figure 1. Keystone Splints ready for application.

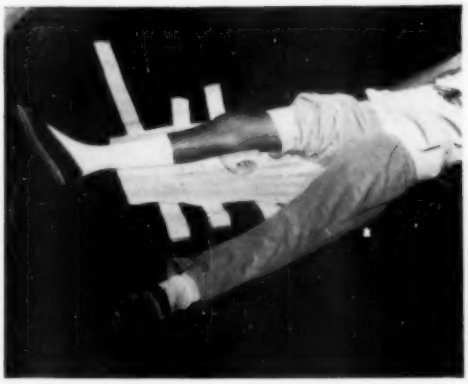


Figure 2. Showing placement of splints with knee support.

This device can be put on readily and meets all the desired characteristics of temporary bracing. Walking can be instituted quickly and the knees can be permitted any desired degree of flexion or extension by placing the straps in position loosely or tightly. This provides for maximum activity *before* permanent bracing is used. Therefore, the minimum bracing requirements are known prior to construction of the permanent braces. Some or all of the battens may be removed as indicated.

This device has been used on several different patients with good results. Since early ambulation is possible (Fig. 3), the emotional and psychological benefits derived are excellent.

A case history illustrates its use and the results obtained. A 25 year old female sustained an accidental gun shot wound on July 10, 1955. There was no arterial involvement but there was involvement of the left pedicle of T-12 and the spinal cord. There was paralysis of both lower extremities.

The patient exhibited complete sensory loss below the iliac crest and reflexes were absent below that level. In July, 1955, a laminectomy revealed that the root of T-12 was severed as well as T-11 and L-1. Postoperatively the patient showed a complete paraplegia at the level of T-11 with complete anesthesia from that level. The patient was flown from an Air Force Hospital in California on Aug. 24, 1955 and arrived Aug. 27, 1955 at The Rehabilitation Center at Philadelphia. Upon arrival she was unable to perform any movement of a functional nature other than to feed herself and was reluctant to do this without help. An intensive program of mat activities was begun followed by training in activities of daily living and a functional movement program. In early September, 1955, work was begun with the Keystone Splints which were modified by use of the knee roll to prevent recurvatum.

The patient was able to stand immediately and walk in parallel bars. She then practised and perfected this technic of walking and by the end of September she could walk for an indefinite period of time in parallel bars.

The next step in the application of the splints involved wrapping the lower extremities in sheets of foam plastic about 2 feet square and ½ inch thick. This permitted more joint activity within the splints without danger to the patient of falling. When the patient stood, the knees unable to support the body weight flexed. The foam rubber which surrounded the knee was then compressed by the body weight to its minimum compressible point. When the weight was thrown to the other side the plastic foam material sprang back again; thus knee movement was secured as the weight was removed from the material. This permitted a certain fluidity of movement within the splint, thereby encouraging joint and muscle activity.

In October, 1955, still utilizing the Keystone Splints, the patient was trained to walk on Canadian crutches (Fig. 4). By the end of

Figure 3. Rear view of splints.

Figure 4. Patient using splints and Canadian crutches.

Figure 5. Same patient as in figure 4. using knee braces having discarded splints.

October, the patient was able to successfully walk alone around the treatment room using the Keystone Splints and Canadian crutches.

During November, 1955 the Keystone Splints were utilized to determine the minimal bracing requirements by the following methods:

1. The abdominal bands were progressively loosened daily until the patient was free of abdominal bands. Then the long wooden battens were removed giving even less support. The patient was able to continue to walk with the long wooden battens removed.

2. The next step was to use less pressure on the leg straps until it was determined that only knee bracing was necessary for this patient. At this point knee braces were ordered. These knee braces had a specially designed knee lock with a set screw permitting some extension and flexion (Fig. 5). The patient continued to improve in her ability to walk and she was able to successfully walk within the building utilizing only knee braces and Canadian crutches (Fig. 5).

While the patient described did not require ankle stabilization there have been other patients in which a small degree of supplemental stabilization was required.

In some cases it was necessary to support the ankles with a tightly wound ace bandage placed over the shoe rather than inside the shoe so that proper fitting shoes could still be worn. The ace bandage was first anchored firmly around the ankle and then under the arch of the shoe so that the ace bandage did not impede walking.

If the patient exhibited an inversion of the ankle, the bandage was carried from the inner border of the foot to the outer aspect to exert an everting action on the ankle. If eversion was exhibited, the reverse procedure was followed. This also was helpful where a foot drop was present.

In some cases a long strap attached to the lower portion of the splint was utilized so that it could be brought under the arch of the foot in a figure-eight before being buckled in order to accomplish the same effect.

Both of these measures proved effective and no further support has been necessary up to this time.

SUMMARY

By use of Keystone Splints as a brace requirement-determining factor, the minimal bracing requirements can be established. Muscles which might not be permitted to function with usual bracing methods may be returned to their highest usefulness. Minimal bracing can then be applied which will permit movement by the use of a set screw lock. It is suggested that this measure is a step toward solving the problems of patients with severe disability of the lower extremities.

Suggestions from the Field

An Above-Knee Pylon with a Functional Knee Joint

Josef Hoog, M.A.

The pylon with a knee joint for the early ambulation of the unilateral or bilateral above-the-knee amputee has not been widely used despite the advantages it offers. It enables the ambulation program to start sooner so that the patient receives proper gait training long before the manufactured prosthesis is available. It permits the physician to determine whether or not the patient can adapt to a prosthesis without a large expenditure of money. The major components of the device can be used for other patients and are inexpensive and easily acquired. Plaster, wood, one or two hinges, and several metal strips form the essential parts. The entire limb is shown in figure 1.

Dimensions

The actual making and fitting of the pylon is relatively simple. For a unilateral amputee the over-all length and joint level measurements are taken to correspond with the normal limb. With a bilateral amputee the correct measurements are somewhat more difficult to ascertain. When the patient using pylons sits in a straight chair the guiding principle is that the knee joints should be flexed and the rubber heels should rest on the floor. This will make the leg section approximately 18 inches in length, which is the standard height of straight chairs. The length of the thigh section is then determined by seating the patient well back in a standard chair and measuring the distance to the front edge of the chair from the ischial tuberosity. To this measurement 3 or 4 inches are added to insure that the knees will flex to 90 degrees without coming in contact with the front edge of the chair seat. The two dimensions are then added together to determine the approximate over-all length of the pylon. In the case of the bilateral amputee, whether or not the patient is exactly the same height as prior to the amputation is relatively unimportant.

Construction

The metal frame is the foundation of the plaster socket and is shown in detail in figure 2. The circular ring should be at least 1 to 1¼ inches larger in circumference than the circumference of the stump, measured at one-half to two-thirds the distance from the distal end. Four uprights are welded to the circular ring and are bent as shown in figure 2. Three or four holes for wood screws are drilled through the metal uprights for subsequent attachment to the wooden pylon. The distal portion of the stump should be a minimum of 2 inches from the point of attachment of the metal frame to the wooden pylon.

The plaster is applied in the usual manner with the patient supine. Stockinette, layer of cotton sheet wadding for padding, followed by several layers of 4 inch plaster bandage are applied to the stump in that sequence. The plaster bandage must be applied snugly to the stump and should extend to the ischial tuberosity. The distal end of the stump remains uncovered. When the first 5 layers have become firm, the metal frame (with the wooden pylon attached) is placed over the slightly hardened plaster. The metal frame should fit over at least one-half to two-thirds the length of the stump. The plaster is then applied over and woven through the metal frame to a thickness of about ¼ inch. Care should be taken

Chief Physical Therapist, U. S. Public Health Service Hospital, Detroit, Michigan.

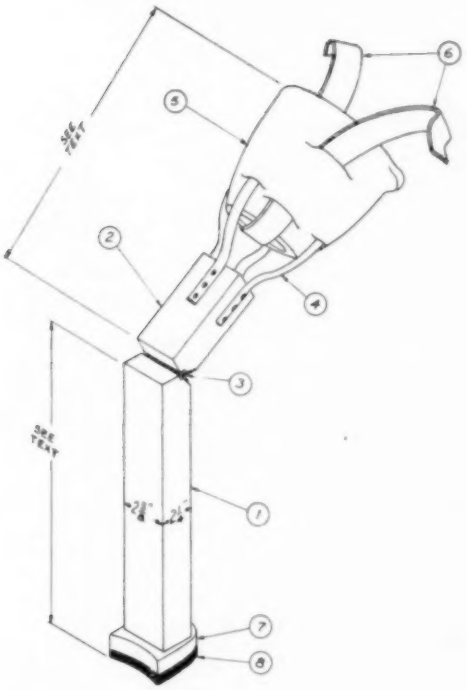


FIGURE 1

Figure 1. Complete pylon for right above-knee amputee.

1. Lower portion of pylon (wood)
2. Upper portion of pylon (wood)
3. Metal hinge (knee joint)
4. Metal frame uprights
5. Plaster bucket
6. Shoulder straps
7. Wood base for rubber heel
8. Rubber heel

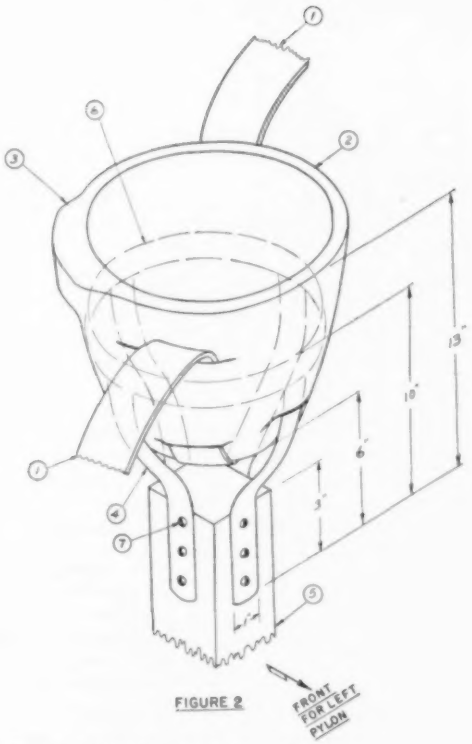


FIGURE 2

Figure 2. Metal frame and plaster bucket

1. Shoulder straps
2. Plaster bucket
3. Flaring for ischial tuberosity
4. Metal frame uprights (welded to circular ring)
5. Upper portion of pylon
6. Circular ring of pylon
7. Wood screws

that the weight of the limb does not flatten the posterior portion of the cast. The cast is allowed to harden and is then removed from the patient's stump to dry thoroughly. After it has dried, the weight bearing portion directly beneath the ischial tuberosity should be flared with the application of an entire 4 inch roll of plaster bandage moulded to the external contour of the bucket. The upper portion of the bucket is then reinforced with 3 to 5 additional layers of plaster. After complete hardening the sharp, uneven edges are smoothed; the stockinette is pulled up and over the edge of the bucket and secured temporarily with adhesive tape.

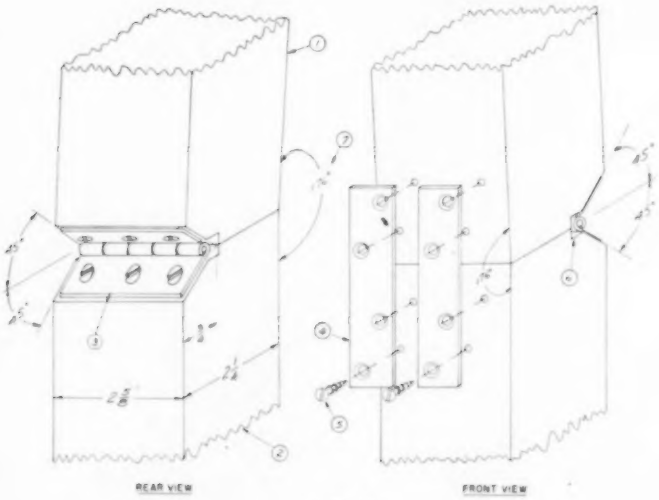


Figure 3. Pylon knee joint

1. Upper portion of pylon
2. Lower portion of pylon
3. Metal hinge
4. Metal strips to lock pylon in extension
5. Wood screw
6. Recess for hinge wrap
7. Overcenter for slight hyperextension

Knee joint

The knee joint is shown in detail in figure 3. As the reader can readily observe, this type of joint allows knee flexion to 90 degrees and slight hyperextension. The hinge, serving as the knee joint, is an over-center type joint which permits slight hyperextension of the knee and insures locking when the stump is thrust in extension within the bucket. This will reduce, if not eliminate, unexpected knee buckling.

There are two ways of incorporating the over-center type of knee joint in the pylon. One may cut the lower portion of the pylon at a 90 degree angle; the upper portion is then cut at an angle of 86 degrees; or one may cut each part of the pylon forming the knee joint at an angle of 88 degrees. When the limb is extended it will fix at 176 degrees, or 4 degrees of hyperextension of the knee. If more hyperextension is required the angle cut out is merely increased. The broad surfaces of the wooden pylon offer little if any lateral movement and, in addition, reduce the strain on the screws holding the hinge in place. No device is needed to pull the lower portion of the pylon forward since the weight of the lower part itself, in addition to the act of hip extension while walking, will propel it forward.

The knee can be easily locked in extension by placing one or two metal strips across the front of the knee joint (Fig. 3, front view). Locking of the pylon may be advisable in the early stages of ambulation training particularly in the case of a bilateral amputee. When the appropriate phase of gait training is reached, the metal strips can be removed.

Attachment

A shoulder strap holds the pylon on the stump. The strap is crossed to the opposite side of the patient's body; i.e., for a patient with a right above-the-knee amputation the pylon strap rests on the left shoulder, and vice versa for the left

above-the-knee amputation. Any heavy material of several thicknesses sewn together should be adequate. Buckling devices can be of leather or webbing and should buckle on the front of the patient. The over-all length of the strap is easily determined by the use of a string. The string is placed between the anteromedial opening of the metal upright and continued obliquely back through the posterolateral opening of the metal upright (Fig. 1 and Fig. 2). The string is then continued to the patient's opposite shoulder and down across the chest to meet the other end. The amount of string needed to perform this measurement will indicate the length of the heavy material required for one pylon strap. To allow for the inclusion of the buckling device 16 to 20 inches should be deducted from this total.

When the limb has been assembled, it is ready for a trial fitting. Just as with all limbs there will be areas about the bucket of the pylon which will require further adjustment. The necessary adjustments should be made after the pylon has been worn for a short time and possible areas of irritation on the patient's stump have been determined. The high rough areas can readily be made smooth by the use of a cast cutting saw. With the adjustments completed, the stockinette can be securely fastened to the bucket with tape. Surprisingly, no padding other than the pulled-up stockinette is required once these areas of irritation have been removed.

Use

The pylon is of such construction that all skills that can be performed with a manufactured limb can also be accomplished with the pylon described. The accepted methods of gait training instruction should be followed. Stance, balancing, gait, and elevation technics should be taught in the same manner that the physical therapist would follow with the use of a manufactured prosthesis. The patient, as a result of the pylon training, has already begun his psychological adjustment to and acceptance of a prosthesis and can easily transfer the acquired skills to the manufactured prosthesis. Moreover, the patient's stump has become toughened and accustomed to weight bearing, which means fewer problems of fitting and adjusting after the finished prosthesis has been delivered to the patient.

The pylon with a functional knee joint was successfully used in the two above-the-knee amputees that were treated in our hospital during the past 16 months. In the actual construction the physical therapist is required only to perform the moulding of the plaster bucket. This phase should not require more than two hours even when constructing pylons for a bilateral above-the-knee amputee. The metal and wooden components of the pylon were constructed in our engineering department with the guidance of the physical therapist. The development of the pylon was initiated in conjunction with the rehabilitation of a bilateral above-the-knee amputee. The second patient was a left above-the-knee amputee. It is interesting to note that when both patients received their limbs from the manufacturer they were able to stand and walk in the parallel bars without difficulty. Through the use of this method of training these patients were rehabilitated and discharged much sooner than would have peen possible if the conventional program had been followed.

REFERENCES

1. Elsert, O., Tester, O.: Dynamic exercises for lower extremity amputee. Arch. Phys. Med. & Rehab. 35:695 (November 1954).

Chapter Directory

The Chapter Directory, usually scheduled for the September issue of the *Review*, will appear in the October journal.

Proceedings

The entire proceedings of the Congress will be available in one volume about January 1. Advance orders are now being received. Order your copy now. Price $3.00.

Editorial

A Word On Originality

During the past few years the annual report of the *Physical Therapy Review* has consistently referred to the increase in the number of papers submitted for consideration and the increasing number of physical therapists whose papers, as published by the *Review*, are making a contribution to our literature. This should be of interest and concern to every member of our profession who holds a regard for professional standing. Because of this the Editorial Board and those who are interested in forming a research section of the Association are anxious to stimulate and supply guidance for the development of scientific material of merit.

From time to time we propose, therefore, to use our editorial page to comment on some of the criteria of good papers and good authorship. Originality is a cardinal example. As we have reviewed past volumes of our journal a section of one paper will be so reminiscent of a previous paper that we must pause to compare texts—which turn out to be markedly similar.

It is conceivable that the similarity between sections of these texts may have been an accident. Occasions have been cited in which two writers, thinking along the same lines, have reported the same incident by choosing identical headlines and writing similar articles.

A more plausible explanation, however, is that the inexperienced writer has innocently taken the expression of the first author and rearranged it to meet his needs. The beginner's attempt at writing often sounds like a hodgepodge of "lifted" sentences and quotes borrowed from the works of others. As an author gains in experience through repeated writing, studying, and critical self analysis of his work, he develops a characteristic style of expression.

Accident or innocence, the fact remains that taking the work of another and passing it off as original is a serious breach of literary ethics.

The *Physical Therapy Review* can maintain high literary ethics only through the standards set by the contributors. If you are uncertain as to what can and cannot be done, libraries have many books which will assist you, or you can direct your questions to the Editorial Board of the *Physical Therapy Review*.

Mildred Elson receives unanimous election to honorary membership and citation presented by Mary Nesbitt.

MILDRED ELSON

WHEREAS, Throughout your professional life you have actively served the American Physical Therapy Association from 1928 when you became the first president of the newly organized Wisconsin Chapter through the years 1932-1936 when you served as chairman of the National Committee on Education and through the years 1936-1945 when you were Editor-in-Chief of the Physical Therapy Review, and

WHEREAS, You, for the past twelve years have provided inspired leadership for the professional physical therapists of the United States through your service as Executive Director of the American Physical Therapy Association, and

WHEREAS, The development of the Association has been dependent upon your expert judgment in the selection of projects necessary to the improvement of physical therapy services, and

WHEREAS, Your guidance in the execution of these projects has resulted in the recognition of physical therapy as a profession, and

WHEREAS, Your breadth of vision has permitted you to become a leader in our profession not only in the United States but in the collaboration of all professional physical therapists throughout the world, and

WHEREAS, The physically handicapped persons of the world will benefit much from your contributions to the physical therapy profession,

BE IT RESOLVED, THAT THE AMERICAN PHYSICAL THERAPY ASSOCIATION BESTOW HONORARY MEMBERSHIP TO MILDRED ELSON AS A SYMBOL OF THE DEEP APPRECIATION FELT BY US, THE MEMBERS.

JUNE 16, 1956 (Seal)

Association Activities

Executive Director Appointed

The Board of Directors announces the appointment of Mary E. Haskell to the position of Executive Director of the American Physical Therapy Association. Beginning September 1, Miss Haskell will assume the position so capably held by Mildred Elson for the past 12 years.

Miss Elson who was unanimously elected to Honorary membership by the House of Delegates in June has rendered outstanding service to the profession and the Association. During that time membership has grown from approximately 3,000 to well over 7,000. Physical therapy has achieved further recognition as a profession; expanded services of the Association have resulted in increased service to the physically handicapped; and the World Confederation for Physical Therapy has developed under her presidency.

Miss Haskell who is a graduate of Bouvé-Boston School of Physical Education has been a member of the Association since 1929. She served as Public Laws Chairman from 1946-1948, as Secretary from 1948-1950, and was elected Vice President in 1950.

Her experience in the National Office has been varied. During 1948 under a grant to the Association from the National Foundation for Infantile Paralysis she compiled the material for the manual, *Essentials of a Hospital Physical Therapy Department*, published by the American Hospital Association. During 1949 she served as the first poliomyelitis consultant for the Association and then returned to clinical work. In 1950 she was appointed Assistant Executive Director and later Associate Executive Director. Since 1950 she has also served as Chapter Consultant with additional duties of consultant to the *Physical Therapy Review*, and since 1953 has been in charge of the annual conference.

Miss Haskell has expressed her pledge to continue the development of the Association, its service to members, and its expressed object "to foster the development and improvement of physical therapy service and physical therapy education through the coordinated action of physical therapists, allied professional groups, citizens, agencies and schools to the end that the physical therapy needs of the people will be met." In accepting the appointment she is confident that she can rely on the same loyalty and support of the Association by all its members and chapters which they have demonstrated in the past.

National Foundation Makes Educational Grant to Association

The National Foundation for Infantile Paralysis has made a grant of $71,134 effective July 1, to the American Physical Therapy Association. This continues the National Foundation's annual grants, totaling $404,930 since 1946, to support the Association's consultant service to physical therapy schools, prospective students, and members, to provide liaison with the medical profession, regarding education and practices, and to continue an intensive student recruitment program.

The announcement was made jointly by Mildred Elson, Executive Director of the Association, and Basil O'Connor, President of the National Foundation.

"The support the Association has been given by the Foundation over the years has made it possible to provide safeguards for the public by improving the professional schools, employment practices of physical therapists, and increasing the number of qualified personnel in the field," Miss Elson said. "Ten years ago few schools were in colleges and universities. Today 30 of the 35 approved schools offer the A.B. degree."

Referring to March of Dimes expenditures for professional education, Mr. O'Connor said:

"Professional education is a basic part of the National Foundation's program. It is obvious that polio patients cannot receive the quality of care they must have unless there are sufficient numbers of qualified personnel practicing in the field.

"The grant to the American Physical Therapy Association is part of a program in which more

than $22,300,000 has been made available by the National Foundation through its professional education division to provide quality as well as quantity of personnel for research and care of patients. More than 2,700 physical therapists, approximately one-third of the nation's total, have received all or part of their professional training through March of Dimes funds. In addition, physical therapy teaching fellowships and grants to physical therapy schools aid in preparing teachers to permit the expansion and improvement of schools."

Mr. O'Connor said that trends in medical and associate medical education have stressed the importance of meeting the total needs of individuals as patients regardless of the disease that has caused the illness.

"The ultimate objective," Mr. O'Connor remarked, "is, of course, to prevent polio, but when the disease occurs, therapists must help to minimize the effects of the disease upon the patient through the prevention of deformity and retraining the abilities that remain. Important in this process also is the consideration of the mental, physical, and emotional needs of the patient."

Miss Elson said the need for physical therapists is still very great and the broadening concept of patient care is steadily increasing the demand. Despite the number already trained, 5,800 additional therapists are needed in the United States this year.

Chapter News

Cerebral Palsy Institute

The Pennsylvania Chapter of the American Physical Therapy Association is co-sponsor of a Cerebral Palsy Institute to be held on Saturday, Oct. 20, 1956 in the Walnut Room of the Berkshire Hotel, Reading, Pennsylvania, between the hours of 3:00 and 5:00 and 7:00 and 9:00 P.M. Other sponsors include the Reading Chapter of the American Business Club's Cerebral Palsy Treatment Center, the Berks County Medical Society, the Pennsylvania Academy of Physical Medicine and Rehabilitation, the Pennsylvania Society for Crippled Children and Adults, and the Pennsylvania Chapter of United Cerebral Palsy.

Dr. Temple Fay, who is widely known for his work with cerebral palsy, will conduct the Institute. He will discuss the classification and early recognition of cerebral palsy, his neurophysiologic concept, and reflex and neuromuscular therapy. Cases from the local Cerebral Palsy Treatment Center will be presented for discussion and Dr. Fay's film on the evolutionary development of primitive patterns will be shown.

Physicians, physical therapists and occupational therapists are invited to register in advance by communicating with Herman L. Rudolph, M.D., 400 North Fifth Street, Reading, Pennsylvania. There will be no registration fee.

Marriages

Ruby E. Apple, of Madison, Wis., to R .N. Hoffman, Racine, Wis.

Phyllis L. Bond, of Cuyahoga Falls, Ohio, to Oden A. Haynes, Baltimore, Md.

Florence E. Bonifield, of Memphis, Tenn. to C. H. Lee, Houston, Tex.

Shirley I. Brown, of Scranton, Pa., now Mrs. Shirley B. Coupland, Scranton.

Dorothy Brownell, of Middletown, R.I. to Samuel A. Everett, Providence, R.I.

Percy Chiringas, of Washington, D.C., now Mrs. Percy C. Poulos, Hyattsville, Md.

Shirley Cutler, of Brooklyn, N. Y., to Oscar Walker, Forest Hills, N. Y.

Joan Donnelly, of Cleveland, Ohio, to John D. Rusk, Jr., Lakewood, Ohio.

Grace Duchin, of Fall River, Mass., now Mrs. Grace D. Falk, Cranston, R. I.

Jane Gale, of Ft. Leonard Wood, Mo., now Mrs. Jane G. Prall, Lansing, Mich.

Carol M. Kennedy, of Denver, Colo., now Mrs. Carol K. Tomlin, Denver.

Madeleine Hoch, of Rocky River, Ohio, now Mrs. Madeleine H. Deter, Fairview Park, Ohio.

F. Jane King, of Toledo, Ohio, now Mrs. Jane K. Chase, Toledo.

Lois M. Mansberger, of Sheppard AFB, Tex., to Thomas W. King, Sheppard AFB.

Barbara McCarthy, of South Portland, Me., now Mrs. Barbara M. Llewellyn, South Portland.

Betty McCoy, of Akron, Ohio, to Donald E. Gantz, Akron.

Judith Miller, of Greensboro, N. C., to George R. Miller, Gastonia, N. C.

Ann Petrie, of Cadillac, Mich., now Mrs. Ann P. Oliver, Coronado, Calif.

Marilyn W. Pond, of Glens Falls, N. Y., now Mrs. Marilyn P. Langdon, Elmhurst, L. I.

Kathleen E. Rice, of Freeport, Illinois, to Edward A. Miller, Jr., Glendale, Calif.

Jenny Roman, of Houston, Tex., now Mrs. Jenny Kamas, Houston.

Grace A. Schmitt, of Louisville, Ky., to Charles Ellison, Louisville.

Betty R. Simmons, of Dallas, Texas, to George M. Basinger, Dallas.

Annual Reports . . . . . .

Report of Executive Director

The measurable work and achievements of the National Office for the past year have been given to the Delegates in mimeographed form and were published in the August *Review*. It is interesting to compare a capsule recapitulation of the statistical reports presented to the House of Delegates, June 1946, the Association's Twenty-fifth Anniversary year. A comparison of the figures, where similar ones exist, shows very satisfactory numerical growth. For example, total membership has doubled; the *Review* circulation has nearly doubled; there are over 50 per cent more chapters; the national office staff has been increased five-fold.

The past ten years have been exceedingly full and it is difficult to say what if any has been the most significant, for each gain, each problem solved, is significant and contributes to our development. In 1946, just one year after V-J Day and four years of war we were on the threshold of a new era. Physical therapy had developed from a luxury service in the minds of many in 1940 to a potent and essential service in the rehabilitation of the war injured. More physical therapists were trained during those four years than the total membership in 1940. Fear was expressed in 1946 that there were too many physical therapists. Schools looked forward to a relaxing of demands, to deceleration. How much in error that was we can now attest, for the demand today is far greater than at any time during the war and no let up is foreseen in the next decade. Enrollments did drop; however, the number of physical therapists coming from the service were quickly absorbed. The Veterans Administration for example needed over 600. Rehabilitation became one of the most over used and little understood terms in all medicine, but everyone wanted it. It was soon realized that there could be no deceleration of training, in fact, quite the opposite. It was also realized that the content of our curriculum needed evaluation and adjustment if the students were to meet not only the demands of 1946 but even of 1956.

Thus our great program in education and recruitment came into being, supported so generously by the National Foundation for Infantile Paralysis. Concurrently the Foundation greatly accelerated its scholarship program and initiated teaching fellowships and made grants to the approved schools. In 1946 there was a meeting sponsored by the Foundation and when I speak of the Foundation and its support of Education I speak of Catherine Worthingham and her great vision, abilities, and dedication to physical therapy throughout this era and the five years immediately preceding. At this 1946 meeting the needs of the future were foreseen in part. They seemed visionary to many, but time proved them to be realistic. In 1946 there were 21 schools. In nine of these both a degree and a certificate program were offered. Two had a degree program only and the other ten offered a certificate. The partnership which we have enjoyed with the National Foundation for Infantile Paralysis in educational efforts such as recruitment, scholarships, interpretation of the profession and its opportunities through publications, in grants to schools, in critical study of curricula to assure that each student would receive the amount and quality of instruction that would enable him to carry out the work demanded of him by physicians and to give him the basis for a continuing educational program, I believe is unique.

Many have contributed to this joint effort, Barbara White, first Educational Consultant; Jane Carlin; Margaret Moore; the present consultants under the inspired direction of Dorothy Hewitt; Helen Hickey and Elizabeth McAuley; the school directors, and instructional staff, who have contributed so much and given support and guidance to the National Office staff on special study committees; Advisory Committees on Education, and the School Section. One cannot enumerate all the events or name all the people whose collective efforts have brought about the present professional accepted programs, both undergraduate and graduate, which exist today. I am not saying that we have reached the goals envisioned for we have not. Another ten year program is just beginning which will require even greater cooperative efforts than in the immediate past decade. I greatly regret that there are no figures on the distribution of informational material for 1945-46. I well remember helping to address what we though was a lot. Keeping statistics of this

activity was just one thing we didn't have time to do. I do though call your attention to the report of Miss McAuley for 1955-56. If the opportunities for a career in physical therapy are not known, with the magazine, T.V., radio and individual mailings of the past year, it is only because someone never reads, looks, or listens.

Although we now have in the National Office departments with well defined areas or responsibilities I wish to emphasize that none stands alone, all contribute and are part of a total program. There is and must continue to be an interdependency, a sharing and working together, to attain the goals set by you and the Board of Directors.

The Departments of Professional Services and Chapter and Membership did not exist as such in 1946. Our staff was small so that each of us did what had to be done. This was wonderful training, though frustrating at times to be trying to do three things at once. In 1946 Mary Castle joined the staff as Field Secretary for two years. So we were now three. This was in a way the beginning of our chapter and membership department, although it was not so designated until 1953. In 1948 Mary Haskell, who was chairman of the Legislation Committee, came into the office to do the research and preparation on the manual on *Essentials of a Hospital Department—Physical Therapy*. This really gave us a big staff and necessitated additional space. At this time the polio incidence in the U.S.A. was on its upward spiral and recruitment of emergency personnel was being carried out by the National Foundation for Infantile Paralysis. This was not without problems and after the 1948 epidemic the Association was asked by the Foundation to take over this task. As Miss Haskell was finishing the manual she was drafted to be our first Polio Consultant and served in that capacity for just under a year when illness in her family necessitated her resignation. In the meantime the title and job of Field Secretary went out of being and Lois Ransom joined the staff as Assistant Executive Secretary in 1949 and was with us for a year. Lucy Blair took over the Polio Assignment in 1950 and with Ruth Whittemore, who joined the staff in 1951, developed the Department of Professional Services. In late 1950 Miss Haskell rejoined the staff as Assistant and later Associate Executive Director.

As you can see things were moving and changing quickly during those years but a form was emerging. We outgrew our office space four times. In 1953 the Board of Directors, recognizing that our rapid and Topsy-like growth needed some direction, authorized a management study. With this and with what we thought would be ample space for years to come in which to function efficiently, our organizational structure really began to work. The days when each member of the staff doubled in brass were almost over.

This was far more significant than you might realize for it meant that consultants could devote full time to a specific area. Polio Emergency Assignment gradually became a department of Professional Services which includes polio assignment, permanent placement service, and consultation to departments and members on service departmental planning. Most of you either directly or indirectly have been recipients of service from Miss Blair or Miss Whittemore by correspondence, in the office, or in the field. Miss Blair with her great talent for organization and her dedication to her profession has developed a department second to none in any professional organization. Because of that the Association through this department was able to participate in the planning and execution of the monumental task of field trials for gamma globulin and the Salk vaccine. That the physical therapists participating in these field trials contributed immeasurably to their success is well known, but it was no accident. The selection, training, and guidance given by Miss Blair assured their success. This past year one of the major projects of the department was the Salary Survey. You will be receiving a preliminary report of that later. This year also we applied for and received from the State Department an Exchange-Visitor Program number. We anticipated that many of our colleagues from other countries planning to attend the Congress would wish to stay for a while and gain experience in our departments. The statistical report of the Department of Professional Services reflects the great amount of work done in the interest of sharing experiences through providing satisfactory work experience. I suggest too that you compare the statistics on placement for 1955-56 with those of a decade ago. This is Miss Whittemore's particular responsibility. The development of this service to you and to employing agencies has been truly phenomenal. A great deal of indirect guidance on salaries and personnel policies and placement has been carried out resulting in far greater changes for the better than is commonly realized. Your Department of Professional Services is devoted to direct service

to you in your daily work. How it is accomplished with a staff of two consultants and two secretaries you may wonder. I can assure you that it is not a 40-hour week job, nor is it in any of the departments.

As I said before, the Chapter and Membership department earned its title in 1953 and Mary Haskell, Associate Executive Director, was placed in charge. Miss Haskell, as you have heard, has had a variety of duties in the National Office dating from 1948. In addition she was chairman of the Committee on Legislation, 1946-48; Secretary of the Association 1948-50, and was elected to the Vice-Presidency in 1950. She resigned from this office when she became Assistant Executive Director. This in addition to her field work in connection with the manual and as polio consultant gave her a unique understanding and background of the job she has done so well. The importance of strong active chapters has always been recognized by the Association. It is here that the Association becomes meaningful and alive to the individual members. If leadership lags and programs are dull, members drop by the wayside. During the early part of this decade we are discussing, many of our chapters, through no fault of their own, were floundering. Members were shifting about the country and often within a year all the officers would change. The war years were even worse so far as changes were concerned. Chapters were localized in the large cities rather than being state wide in character; as a result those working outside a metropolitan area were not able to participate.

In the 1948 Revision of the Bylaws, membership at large was eliminated and chapter membership made mandatory. This was the initial step and gave challenge to us and to the members in developing real chapter organization. One needs only to look back eight years to realize what progress has been made. There are now 58 chapters and 39 districts within those chapters. All chapters are chartered, 24 states now have legal registration or licensure. It is an interesting historical fact that the importance and need for registration was recognized in the early twenties. There was an active legislative committee but with a national membership of less than 500 this dream could not be realized and we have yet to meet our goal. To attain in chapter organization what we have today has been a long slow process and often discouraging. Manuals have been prepared, model bylaws, model registration laws, memoranda have been written, field visits made, all in the interest of better organization and greater understanding. A chapter would appear to be functioning then suddenly the president or the secretary would move. Records were lost and work would have to be started all over again.

On field visits we would hear the same story in many chapters. "No one will accept an office or work on a committee"—"we can't get a quorum for our business meeting" and so on, but usually there was a little core of dedicated members on which to rebuild. In some chapters a crisis in legislation did the trick, in others it was something else which sparked a revitalization. Very likely a field visit from one of the National Office consultants gave inspiration and new determination to the chapter officers and at least a portion of the members put their shoulders to the wheel to make the chapter a going concern.

We in the National Office after every field trip and every conference discuss the problems, note any gains, and try to assess the effectiveness of what is being done and how we can do a better job from our end. Your needs made known to us by letter, by personal conferences, and field visits give direction to all our efforts and procedures. Often you chided us for not doing more —"Why hasn't National" done this or that. Sometimes it had already been done; sometimes it was in progress. We in turn would feel you were not doing your part, that you did not read communiques or the *Review*.

Failure of communication channels is the natural deduction for such a situation. This is not an uncommon happening in organizations. We have reluctantly recognized that for a portion of the membership there is need for almost an advertising campaign. However, costs preclude such a program and we proceed on faith in the majority to keep themselves informed through the media available to us, the *Review*, the Newsletter, and correspondence. Large chapters are experiencing similar difficulties as seen by pleas in the chapter newletter asking the members to come to meetings, to read the newsletters, etc. We will always be faced with the fact that there will ever be a portion of the membership who wili receive without reciprocating in service or even attending a business meeting. All we can hope is to keep the number to a minimum.

It has been a joy to watch the development of the House of Delegates. Some of you may remember it ten years ago and appreciate how it has developed into a mature legislative body. The officers of the House both past and present have given it form. You in turn have contributed to its quality and effectiveness in the election of your delegates. You have assumed responsibility

for the chief delegates' expenses in whole or in part. Your delegates have been instructed, giving them the security which comes from knowing how their constituents feel about the issues before them on which they must vote. The sessions of the House are now stimulating and are an example for chapters to follow in their business meetings.

The role of the Annual Conference in the growth of the Association is an increasingly important one. This is our annual showcase, for the members as well as the public. An opportunity through papers, exhibits and films, to show tangibly what the profession of physical therapy has done and can do for the patient. I know that you are as proud as I am of the knowledge, competence, and imagination of your colleagues who have participated. The Conference Program Committee, the Board of Directors, the National Office staff, and the hostess chapter work cooperatively to make each Conference better than the one before—one which will meet your needs professionally and socially. New approaches are used. Last year was a fine example of a new departure with its workshops. The great value of group dynamics and its potentialities for chapter meetings was clearly demonstrated. This year, the Thirty-fifth Annual Meeting, the Association was host to the Second Congress of the World Confederation for Physical Therapy. Preparation for the Congress has been going on for over two years. The Planning Committee, under the chairmanship of Catherine Worthingham, developed the great program you will be enjoying. It was necessary to add additional temporary office space and staff. For the first time we have a Congress Manager, not a physical therapist, Miss Patricia Ann Tickell. All of the regular staff, and in particular Mary Haskell, Dorothy Voss, Charlyne Cox, Ellen Pinque, Helen Lipshie and Sally Rayes have worked devotedly and with great imagination to assure its success. The financial support and great interest of you, the members, have been wonderful and given added incentive and great encouragement to all our endeavors. The members of the Greater New York District of the New York Chapter have volunteered to assist with hospitality, ushering, and for many other services before and during the Congress.

Two years ago dues were raised to meet the rising cost of membership services and to provide for additional essential services and material. An Advisory Committee on Chapter and Membership was appointed. A report of that committee appears in the June issue of the *Review* and I hope will be read carefully by every member. You will see how the committee is studying the "little things" that plague you as well as the larger issues with suggestions for their solution. This past year two documents were prepared and distributed to help chapters in their organization and programing, one a Manual of Organization and the second a Summary of Chapter Workshops held in St. Louis last year. As Miss White pointed out in the *Review* the Manual is not static and is open to revision upon your suggestions after it has had a trial. The raise in dues also made it possible to add another staff member last fall, Dorothy Voss, who will in the coming year spend an increasing amount of time in chapter visits.

The Department of Chapter and Membership has in a sense a coordinating function in the National Office. As I have pointed out, all of the work in the National Office is directed towards development of the profession which ultimately affects every member. Much of the work of the departments of Professional Education and Professional Services must have membership and chapter understanding and participation for its success. Therefore, there is and must be close cooperation and communication between all of the staff to assure proper emphasis and attention to all the many facets of the specialized areas if the program in any given year is to be reasonably balanced. Your attention is also drawn to the statistical reports for the *Physical Therapy Review* circulation and advertising. What does not show there and cannot be shown by figures is the quality of production and the changes in format, type and layout, the quality of the articles, editorials, abstracts, book reviews, news coverage, and additional departments. The Board of the *Review* together with Miss Haskell, Miss Vance, the managing editor, and this past six months, Miss Voss, keep a critical eye on every issue. Expert advice has been obtained on format to improve its readability. A look at the issues for the past ten years will reveal the changes many of you may not have noticed, they have come about so gradually. In June 1952 we retained an advertising manager, Gordon Marshall, who also manages the technical exhibits at our annual conferences. Mr. Marshall has succeeded in "selling" our journal to an ever increasing number of advertisers. That this is possible reflects the awareness of the advertisers of the potentials marketwise of the *Review* circulation. The increased revenues from advertising have made it possible to have paid staff. Miss Vance who has been with us in the office since 1947

has been managing editor of the *Review* since 1952. That she has done a superb job is evident. It must be remembered too that the Board of the *Review* is composed of members serving on a voluntary basis. For their tireless efforts at the sacrifice of leisure time we cannot be grateful enough. The *Review* is tangible and on its appearance and content the profession is judged by others. During the past ten years we have been fortunate indeed to have had help over and above the call of duty from Mr. David Carey of Lenz and Riecker, the printer. His patient help and guidance in make-up of the *Review* have been invaluable to us in the office and to you in more ways than I can tell. This year the Cumulative Index of the Review of the years 1940-54 finally became a reality. It has been on our planning board for nearly five years. Mrs. Eckersley, who was Business Manager of the *Review* for many years, started work on it but it was interrupted by her resignation. Helen Hislop, a member of the Editorial Board volunteered last summer to complete it. This was a tremendous contribution and she has our most grateful thanks.

Another comparison I would like to call to your attention is the financial statements of 1945-46 and the current year. To maintain the staff and services of today requires five times the budget of 1946. The amount received from dues and *Review* subscriptions and miscellaneous revenue in 1955-56 is also five times that of 1945-46. However, as you will note that amount is only 54 per cent of the total revenues, the rest being acquired from grants from the National Foundation for Infantile Paralysis. There is no professional organization such as ours that can exist solely from revenues received from dues. Outside funds must be obtained to carry out specialized programs such as recruitment, for example. A professional organization is not completely a master of its own destinies. For example, the great rise of voluntary agencies identified with a particular disease or crippling condition has greatly increased the demands for personnel and service. Through their publicity and fund raising activities funds are solicited from the public to "conquer" the disease or condition. To fulfill their obligations to the public monies are in turn granted to hospitals for increasing or enlarging service departments such as physical therapy; treatment centers are built; home care programs developed. The next link in the chain is personnel to staff them. They turn to the professional organizations for help and it is then found there aren't any or not enough. So the spiral starts spinning another way. There must be recruitment, more students, and more students, then it is found that there are not enough spaces in the schools, not enough schools, not enough teachers. To meet these needs takes more money than a professional organization has for personnel, promotional literature, for study committees, etc. One can reasonably deduce that there is a responsibility for these agencies to grant funds to the professional organizations so that their purposes and their responsibility to the public, which gave them the funds to attain stated goals, may be met. The National Foundation from its inception recognized this total cycle which is one of the reasons for its great success. It has carried out its obligations to the public through grants to us and other organizations making it possible to provide proper personnel for comprehensive medical care to polio patients. Other agencies have contributed in a smaller way through scholarships and grants to schools but none in the proper proportion to carry out fully their obligations to the public in my opinion. More recently the OVR has initiated a program of financial assistance to schools, has awarded scholarships, and financed workshops to make it possible for that agency to carry out a program to which it has been committed by legislation. We therefore must continue all efforts to interpret to both voluntary and governmental agencies the importance to them and to the success of their programs, which they should see for themselves as did the National Foundation for Infantile Paralysis, of providing funds required for recruitment of students, teachers, of guidance in strengthening existing programs, and establishing new ones. In addition we are called upon by agencies to an ever increasing extent for service consultation such as departmental planning. One thing inevitably leads to another. Projected program plans to meet anticipated personnel demands for the next five years have been made by the staff and its advisory committees, but whether or not they will be realized depends on funds to which every voluntary agency, soliciting and receiving money from the public for service programs to the handicapped, should contribute.

In this incomplete summary report of Association activities I have confined myself mainly to tangibles. It is very difficult to describe the amount and kind of day-in-day-out work on intangibles. One cannot measure or tabulate the imagination and vision of one's staff, that can only be reflected in part in statistics.

To have had a part in this past decade in the growth and development of our profession has for me been a great privilege and an honor. I can assure you that many, many times I have felt my inadequacies to meet the crises that develop so unexpectedly and to give the leadership the job requires. Growth of our profession was inevitable and for that we cannot take credit. It is due to the individual physical therapist who through his daily work continuously demonstrates its great value to the patients entrusted to him. Growth and particularly rapid growth, however, brings up many problems which a professional organization must meet and solve. Through the leadership of your Board of Directors and the coordinated efforts of committees, National Office staff and many others, a firm organization has been built—an organization geared to meeting the problems of today and able to, at least in a small way, anticipate those of tomorrow.

The next decade should show even greater growth than in the past one. The way will not be easy and the demands on you will not be less. As in the past there will be crises which you will meet, discouraging times which will pass, and when in 1966 a report is made it will be found to contain amazing progress.

I wish to express my deepest appreciation to all of you for all you have done in so many ways to support and supplement our work in the National Office. We have tried to carry out your wishes both expressed and not expressed for we know deep in the hearts of all physical therapists is the desire to see their profession advance and grow in stature. To this end all our work has been directed. Through the 12 years I have been in the office I have been blessed with a loyal, dedicated, and hardworking staff from Associate Director and Consultants, to all the secretariat without whom we could not function. I cannot express the depth of my appreciation to them or adequately acknowledge their contribution. They are my very good friends—for whom I have deep affection and in whom I have had great trust. It was only after a great deal of soul searching that I tendered my resignation to the Board last fall. I felt the time had come to relinquish the position you had so honored me with these past 12 years. I know that to my successor you will give the same loyal support and friendship which have made my term of office so personally rewarding. I thank you all from the bottom of my heart.

Signed MILDRED ELSON

Summary of Chapter and District Reports

The chapter structure of the Association did not change during the fiscal year, 1955-56, but there was an increase in the number of districts within the chapters. There are presently 58 chapters, with 39 districts within 18 chapters—an increase of 10 districts.

The data appearing in this summary were compiled from 53 chapter and 25 district reports. Three chapter reports were received too late to be included in the statistics, thus leaving only 2 chapters and 14 districts who failed to complete reports.

A membership gain of 546 occurred during the fiscal year. This gain was fairly evenly distributed throughout the chapters, with all but 13 chapters showing an increased number of members. Eight chapters have under 25 members, 13 chapters under 50 members, and these 21 chapters comprise approximately one ninth of the total membership. Thirteen chapters have 50-100 members; 9 chapters 100-200 members; 2 chapters 200-300; and 8 chapters over 300. One third of the total membership is represented in the 6 largest chapters, which are New York, Southern California, Northern California, Pennsylvania, Massachusetts, and Illinois.

All chapters held chapter, executive committee, and business meetings during the year; all districts held district meetings and business meetings, with all but 5 holding executive committee meetings. Thirty chapters, as compared with 9 last year, met with their Advisory Committees; 10 chapters did not appear to have Advisory Committees, and the remaining 13 chapters reported no meetings with their Advisory Committee. The majority of the chapters that met with their Advisory Boards did so for the purpose of discussing legislative problems. The Advisory Committees were composed predominately of medical personnel, yet 15 chapters had lawyer members, 11 chapters hospital administrators, while several had educators, newspapermen, and representatives of state agencies.

The chapters had some 16 different standing committees active during the year. The 5 most commonly mentioned, in order of occurrence,

were committees on public laws or legislation, recruitment, program, public relations, and education. The districts reported 12 active standing committees, listing 3 most commonly: recruitment, program, and public laws. Special committees numbered 28 for all chapters, and 10 for the districts. The most common committees listed were those on recruitment, newsletter or directory, legislative, and exhibits, although no one of these committees was mentioned by more than 6 chapters or districts.

New members were welcomed to the chapters and districts, in the majority of instances, by invitations to meetings, personal contacts by letter or telephone, and by asking newcomers to assist with the program or serve on committees. Student members, if in the chapter or district area, were invited to meetings, asked to help in planning programs, and to assist with recruitment.

Sixteen chapters and 3 districts have published directories, with 12 chapters and 5 districts currently in process of publication. Thirty chapters published an average of 3 newsletters per year, while 9 districts published an average of 2 for the year. The National Office was on the mailing list of 9 chapters and 4 districts for their directories, while 24 chapters and 7 districts sent the Office their newsletters.

All but 22 of the chapters and 23 of the districts reporting had at least one organizational membership. There was considerable variety in the organizations mentioned, but the most frequent were health and welfare councils, hospital associations, and state or national rehabilitation and vocational associations.

Thirty-three chapters and 14 districts had members participate at program meetings. The most successful programs seemed to be those that were annual or state meetings, those held on week ends, or those that were conducted as joint meetings with other groups. The most popular subjects appeared to be presentations on orthopedic and neurological conditions.

Exhibits were shown, at times other than scheduled meetings, by 18 chapters and 7 districts. Nine chapters and 6 districts have exhibits available for loan. A listing of these exhibits, with their description and method of procurement, will appear in the *Review*.

The majority of the chapters and districts had no legislative problems other than physical therapy registration and licensure. Five chapters within the 24 states now having physical therapy practice acts, report that they have been revising or amending existing acts. Sixteen chapters report work in progress on drafting a state physical therapy practice act; chapters in 3 states report bills passed, while in one state a bill was tabled. Seven chapters report members assisting on a State Board of Examiners. Only 7 chapters reported having done nothing on legal problems or discussing legal problems in their meetings.

The Chapter Manual has been used by 38 chapters and 15 districts for reference, guidance, planning, and orientation to the Association. The Manual appears to have been little disseminated to the members, but was used chiefly by the officers of the chapters and districts. Fourteen chapter and 5 district secretaries noted that to their knowledge the Manual had not been used, due mainly to the fact that it had been received only recently.

Any questions regarding this report may be referred to the Advisory Committee on Chapter Activities. This committee solicits your suggestions, through the National Office, on any matters pertaining to chapter and district affairs.

DOROTHY GRAVES
Secretary

Report of the Secretary

In the January 1956 *Review*, a summary of the business transacted by the Board of Directors at their annual meeting in St. Louis and semi-annual meeting in New York in October was reported to you. This report contains items which have transpired during the fiscal year 1955-56 since the printed summary, as new business, or resultant action on previously mentioned business occurring during the two year term of the past Board of Directors.

In addition to the two regular meetings, monthly bulletins and memoranda were sent to the Board from the National Office, keeping the Board alert to all developments in the Association, and allowing the Board to make necessary decisions by vote on policies and procedures. Routine business consisted of approval of the revisions of chapter bylaws; acceptance of properly qualified foreign-trained physical therapists for association membership; rejection of those not properly qualified; and the election to associate membership of chapter nominees. As of April 30, 1956, 46 of the 58 chapters had submitted chapter bylaw revisions which received subsequent Board approval.

The Council on Medical Education and Hospitals of the American Medical Association at their December 1955 meeting approved the

"Essentials of An Acceptable School of Physical Therapy," thus culminating one of the major projects of the Board and its Advisory committees. Copies may be obtained by writing to the American Medical Association; it is planned to publish these "Essentials" in a fall issue of the *Journal of the American Medical Association.*

The World Congress Planning Committee completed its assignment with the presentation of the Second Congress for the World Confederation for Physical Therapy at the Hotel Statler, New York, June 17-23, 1956.

The survey of personnel policies for physical therapists has been partially tabulated by the Department of Professional Services in the National Office and was presented to the Board and the House of Delegates in New York. When completed it will appear in the *Review.* Still in progress are the plans for revising the Manual, *Essentials of a Hospital Physical Therapy Department,* and you will be kept aware of future action by the committee appointed to undertake this project. The *Manual for Vocational Counselors,* prepared by Miss Hickey, will go to press in the near future. Its method of distribution will be announced in the *Review.*

The third Institute for Physical Therapists, co-sponsored by the American Hospital Association and the American Physical Therapy Association is planned for November 5-9 in San Francisco. Watch the *Review* for further announcements.

In October 1955, the Board referred the question of opening membership to previously rejected applicants to the Advisory Committees on Professional Education and Chapter Activities. Recommendations from these committees were presented to the Board, and after due consideration of all facets of this issue, the Board voted against waiving the present membership requirements.

June 23, 1956 marked the first meeting of the Self-Employed Section of the Association, thus completing the work of the committee appointed to study the problems of the self-employed and prepare rules governing the section for presentation to the section members.

The committee from the School Section, authorized by the Board, held a two-day meeting to consider procedural changes and a revision of the rules of government of this section. Their assignment was completed by the presentation of their recommendations to members of the section for consideration at the business meeting, June 23, 1956.

The formation of the new Research Section is still being explored by interested members and you will be kept aware of any developments.

The three Advisory Committees to the departments within the National Office met within the past months and have reported to the Board of Directors. A report to the membership from the Chairman of the Advisory Committee on Chapter Activities appeared in the June *Review.*

New appointments were made as replacements on the Advisory Committee on Professional Education and the Conference Program Committee. Charlotte Anderson was appointed to the Advisory Committee, and the following three members were appointed to the Conference Program Committee which is a standing committee: Marcia Shaw, Chairman, Beatrice Schulz, and Gudrun Tanberg. New committee appointments or replacements are generally made at the semiannual Board meeting and all current committee members are then listed in a subsequent issue of the *Review.*

At the request of the Council on Medical Education and Hospitals of the American Medical Association, two representatives, Dorothy Hewitt and Margaret Kohli, were appointed to serve on the Council's newly established Advisory Committee on Physical Therapy Education. The Committee functions will be to assist the Council on request, in evaluating new schools, periodic evaluation of existing schools, and future revision of the "Essentials."

An ad hoc committee was appointed to study the structure of the Association, and make recommendations or suggestions as it deemed advisable. One of the first assignments of this committee was to study the position of Executive Director, and propose revisions in the job description of duties. The Structure Committee called on a firm of management consultants for advice and assistance in evaluating the position of Executive Director and this ultimately led to authorization of a survey of the Association's structure by Mr. Pleydell and his associates. The preliminary results were presented to the Board and the House of Delegates by Mr. Pleydell with his recommendations for future consideration by the membership. A brief summary of his report will appear in the October issue of the *Review* in the summary of the minutes of the House of Delegates meeting.

Following the House of Delegates authorization in St. Louis to establish a fund to receive tax free donations to be used to advance the science of physical therapy, the Board of Di-

rectors has discussed a preliminary certificate of incorporation and bylaws which when completed will be adopted and implemented in the coming year.

During the past two years it has been a privilege and a pleasure to serve in the capacity of secretary to the membership. As I pass on this job to my successor, Louise Bailey, may I take this opportunity to thank all of you for your help in enabling me to carry out the secretarial duties as prescribed in our bylaws.

DOROTHY GRAVES
Secretary

Report of Judicial Committee

The Judicial Committee in its second year has made great strides in acting on charges of violation of the Code of Ethics. Last year we reported nine cases under consideration; this year eight of the nine were closed without formal hearings; one remains open. Each written complaint was thoroughly investigated in accordance with procedures outlined in Chapter XVIII, Ethics and Discipline, of the Manual of Chapter Organization, a copy of which has been distributed to each chapter. In all of the closed cases, investigation revealed that either no basis existed for the complaint or the accused intended to cease violating the Code and to uphold the principles governing professional conduct of members of the Association. It is a great pleasure to report that during this year no new complaints have been submitted. The Committee believes this indicates that the members of our Association, on the whole, have little or no difficulty in carrying out their professional obligations with honor and integrity. However, it would be naive for any of us to presume that every member is contributing to the highest purpose of our profession. Are you maintaining a high standard of ethical behavior by "disclosing to the proper authorities any knowledge you may have concerning unethical practice being carried on by any member of this profession?" Or, are you also unethical by not making such disclosure or being unwilling to testify? Those are questions for you to answer.

The Committee is gratified by the number of inquiries received from chapters and individual members requesting interpretation of certain sections of the Code in relation to specific situations. The majority of inquiries relate to Article IV, Section 2, regarding advertising to the public and medical profession. Under the Code of Ethics, soliciting patients directly or indirectly by a physical therapist, by groups of physical therapists, by organizations, institutions, through an agent, or by circulating printed matter for advertising purposes is unethical. Sending announcements to the medical profession at the time of opening an office or clinic is considered ethical. However, in some localities, this practice would not be acceptable. The best advertising is the establishment of a well-deserved reputation for professional ability and ethical conduct.

The Judicial Committee at its meeting in January reviewed the Code of Ethics for possible revision in the light of past experiences. One standard inherent in the general principle of the profession of physical therapy appears to need amplification; namely, that the physical therapist engaged in the practice of physical therapy limit his income from such practice to payment for services to the patient; that the sale or rental of equipment or supplies is unethical except in those instances where the patient cannot readily procure these items from other sources; that any such sale or rental must be without profit to the physical therapist. The Committee further found that editorial changes needed to be made for the purpose of clarification. The judicial Committee will welcome suggestions from chapters and members for improving the Code of Ethics. To be considered by the Committee suggestions must be received not later than September 1, 1956. This Committee's suggestions and recommendations for revision of the Code of Ethics by the House of Delegates in 1957 will be presented to the Board of Directors by November 1, 1956.

The experience of this Committee for the last two years leads us to the conclusion that there is no gross misconduct or violation of the Code of Ethics by the members of the Association. Therefore, we believe the Judicial Committee can best fulfill its responsibilities to the Association by having as its main objective interpretation of the Code of Ethics. To this end we propose to prepare or suggest statements and short articles for publication in the *Review* and the *Newsletter*. Some tentative topics are:

When do physical therapists use initials after their name?

How do we prevent or correct being called "doctor"?

What is "information of a confidential nature"?

What is considered advertising for the solicitation of patients?

What is the difference between "encouragement of patients" and "giving prognosis to the patient"?

How should "reexamination date" and "termination date" be interpreted?

What is the significance of the phrase "join and give full support to the professional organization"?

The Judicial Committee requests your help in this undertaking by suggesting topics you think should be interpreted. Join us in developing our professional philosophy.

RUTH GUERIN
GLADDFS NEFF
LEON STUTZMAN
ELIZABETH WOOD
CLARA ARRINGTON, *Chairman*

Report of the *Physical Therapy Review*

It is usual at this time for the Editor-In-Chief of the *Review* to report to the members on the activities of the past year. Such reports usually are concernd with new features, statistics of circulation and advertising, and future planning. However, this report will deviate somewhat from this pattern in that it will attempt to to summarize for you the development of the *Review* over the past six years.

During this time there have been many changes both in the appearance and the content as well as in the personnel responsible for publication. In every case, these changes have been made in what was honestly thought to be the best interest of development. Not all of the ideas that were suggested or tried have proved successful. We have made mistakes and to err is human, but in the main the *Review* has progressed and expanded its scope of service. A great majority of the revisions and changes have been relatively minor in nature and perhaps went unnoticed by most readers. I am referring to such things as the change in type style in 1953, the beginning of the Christmas card page in 1954, and the introduction of color first in advertising (1952) and later in the main sections (1955). Behind the scenes there have been numerous policy adaptations ranging from such minor items as the type of card sent to book reviewers to the more obvious factors such as the handling of references in scientific papers. It would be impossible to list everything reviewed, discussed and revised by our Editorial Board over the years. But in each case the change, whether it was an adaptation, a deletion, or a revision was done with one thought in mind—to make the *Review* serve you better.

Certainly the most appreciated change which has come about since 1950 has been the increase in material submitted for the Board's consideration. For this full credit must go to you, the members. In ever increasing numbers we are finding physical therapists in clinics, those engaged in research, and those teaching in the schools meeting their professional obligations in writing for and about their field. This has, of course, led inevitably to two major advantages in the *Review*. First, it has become possible to be more highly selective in regard to the quality of material printed and second, to arrange this material to provide for a greater variety of subject matter. Incidentally, there has been a third change in the increased size of the *Review* enabling us to present more material each month for your interest.

Two new sections have been added during recent years in the form of the Student Section and the department called Suggestions from the Field. The Student Section was established in an attempt to interest physical therapy students in the *Review* and in their fellow students and also to provide them with a professional outlet for original ideas and accomplishments. I wish at this time to express particular thanks to the Associate Editor, Major Whitcomb, the various student editors, and their assisting regional editors who have given so freely of their time and energies to make this section so successful. "Suggestions From The Field" came into being rather spontaneously as a result of great interest on the part of our readers in sharing ideas of merit with others. This section has presented numerous ideas ranging from types of records to improvised equipment which, it is hoped, have been useful to many of you.

Certainly you will agree the one most obvious change has been the redesigned cover with its change in color. As a point of interest it was found after the change had been made that the original issue of the *Review* had also been blue, so that now we have come full circle over a period of some 35 years. It is the hope of the

Board that the new design will prove more useful as well as more attractive to all of its readers.

Attention should be called to two regular departments in the *Review* which we feel provide a special service. These are the Book Reviews and the Abstracts which appear with such regularity and such high level of quality each month. They represent a great deal of time-consuming work on the part of members of the *Review* Board. Special thanks must go to Miss Kolb, Miss Hislop, Miss Shaffer and Miss Latimer who have kept these sections developing and improving at a steady rate. You may also have noticed a recent change in the format of the Index to Current Literature. This is now subdivided into specific categories to enable you to use it more easily. Our thanks again to Miss Hislop for this service.

Certainly none of this development would have been possible without the excellent staff in the National Office who really keep things going. Their devotion to the multiplicity of details, their guidance and suggestions have been, without doubt the one most important reason for the growth of the *Review*. To Miss Vance, Miss Showe, Miss Haskell and Miss Voss goes full credit and appreciation from the Editorial Board.

I could go on listing many more changes and pointing out what we hope are improvements that have taken place. Many are such obvious ones as the increase in advertising and circulation, the "What's New" section, the increase in classified ads and the increase in the size of the Editorial Board. However, it is our hope that these merely reflect the over-all development of the publication. The *Review* has always had but one objective and one aim—to serve as the representative of physical therapy as a solid, contributing profession in the world of medicine. Every change, every development, and every effort which has been made has been done with this in mind. Much more remains to be done for this is really only a beginning. Your *Review* will continue to serve in its chosen capacity so long as each member supports and utilizes it. We are sure that its future is very bright.

E. JANE CARLIN
Editor-in-Chief

COLONEL UNDERKOFLER

Chief of Medical Specialist Corps

Colonel Audrey A. Underkofler, USAF (MSpC), has been appointed Chief of the Medical Specialist Corps, Air Force Medical Service, Office of the Surgeon General.

Colonel Underkofler holds a B.A. degree from Iowa State Teachers College and an M.S. degree in Physical Education from the University of Iowa. She completed the Course in Physical Therapy at Walter Reed Army Hospital in 1943 and served in Army hospitals, including overseas service in the European Theater, during World War II. From 1946 to 1952 she was Chief Physical Therapist in Air Force hospitals. She was then appointed Assistant Chief of the Air Force Women's Medical Specialist Corps and Chief of the Physical Therapy Section, Office of the Surgeon General, with rank of Lt. Colonel, serving in this capacity until December 1954. Since that time she has been Consultant to the Surgeon, Headquarters Air Training Command and Chief Physical Therapist at the USAF Hospital, Scott Air Force Base, Illinois.

Colonel Underkofler's notable background of professional ability and administrative experience during early development of this Corps resulted in her being ideally suited to be chosen the new Chief of the Air Force Medical Specialists. As second Chief of the Corps, she succeeds Colonel Miriam E. Perry, who recently retired after 20 years of service.

The Corps celebrated its seventh Birthday on July 1, the same date its new Chief accepted office and was promoted to the rank of Colonel.

Banquet at the Second Congress of the World Confederation for Physical Therapy, Statler Hotel, New York, June, 1956

World Confederation for Physical Therapy Elects Officers

During the third general meeting of the World Confederation for Physical Therapy held in New York, June 20, officers were elected as follows:

President - Miss G.V.M. Griffin, Great Britain
First Vice President - Miss Mildred Elson, USA
Second Vice President - Mrs. R. Agersnap, Denmark
Third Vice President - M. Jacques Dupuis-Deltor, France

These officers together with representatives to be named by Australia, Canada, Finland, and Sweden will serve for the next three years as the Executive Committee.

In announcing the results of this election the Honorable Secretary, Miss M. J. Neilson, writes:

"As you know America was instrumental in forming the World Confederation and the member countries wish to express their appreciation for all that Miss Elson has done during her term of office as President. They are delighted that her valuable experience and wisdom will remain available to the Confederation in her capacity as First Vice President."

Institute for Physical Therapists

The third annual Institute for Physical Therapists conducted by the American Hospital Association in cooperation with the American Physical Therapy Association will be held in San Francisco at the Hotel Sir Francis Drake, November 5-9, 1956.

This year's institute is sponsored by the Northern California Chapter of the American Physical Therapy Association, the Association of Western Hospitals, and the California Hospital Association. Emphasis will be placed on the management responsibilities of the physical therapist as a department head and the place of the physical therapy department in the hospital.

Only members of the American Physical Therapy Association, or those who are personal members or on the staff of an institutional member of the American Hospital Association may attend. Enrollment is limited and active members of the Association will receive application forms in September. The faculty will consist of hospital administrators, physical therapists, and physicians.

Student Section

Regional Student Editors

Region I—Editor Audrey Haugaard—Simmons College
University of Connecticut
Boston University
Bouve-Boston School
Simmons College
University of Pennsylvania
The D. T. Watson School

Region II—Editor Joan Erback—New York University
Columbia University
Albany Hospital (Russell Sage College)
New York University
University of Buffalo
Frank E. Bunts Educational Institute
Walter Reed Army Hospital (May-Sept.)

Region III—Editor Marcia Field—Med. College of Virginia
Medical College of Virginia
Charity Hospital of Louisiana
Duke University
Baylor University
Hermann Hospital
University of Texas
Medical Field Service School (Sept.-May)
Brooke Army Hospital (May-Sept.)

Region IV—Editor Carol Vacca—St. Louis University
Northwestern University
State University of Iowa
University of Kansas
Washington University
St. Louis University
University of Oklahoma

Region V—Chairman Gail E. Barrand—University of Wisconsin
University of Minnesota
Mayo Clinic
University of Michigan
University of Colorado
University of Wisconsin
San Juan, P. R.

Region VI—Editor Ronald E. Bell—Children's Hospital
Childrens Hospital
University of Southern California
University of California
College of Medical Evangelists
Stanford University
Letterman Army Hospital (May-Sept.)

Student Editor—Audrey Haugaard

Report from University of Colorado School of Physical Therapy

We're having a party
But you can't come!
Why? 'Cause it's all over:
Refreshments and fun.

Commencement: 8:30
The date: May 12th
The purpose: To inform
The topic: Health

What's this all about, you ask? We *want* to tell you, because we think it was a big success. It all began at the University of Colorado Medical Center when four of the medical services, X-ray, Medical Record's Librarians, Medical Technology, and Physical Therapy, recently conducted a program designed to acquaint the public with their various functions. The guests included guidance counselors and other representatives from high schools along Colorado's eastern slope.

Groups ranging from eight to ten in number were taken to visit each of the four departments. In Physical Therapy we, the students, made sure that they were royally entertained as well as adequately informed.

We had a great deal of fun in presenting our program; not only did students act as physical therapists, but also as patients. Each of the various modalities was demonstrated in a "true to treatment" situation while the student physical therapist briefly explained the purpose, indications, and precautions involved in such a program. Our only problems arose when the patient in the Hubbard tub had to quickly prepare for her hanging—in the Sayre head sling, and our "helpless" quadriplegic on the treatment table slowly arose before the astonished eyes of his audience to demonstrate his skill on the bicycle.

The last demonstration to be given was that of electrical stimulation. It aroused considerably more interest when volunteers from the audience participated as patients.

About 12:00 noon all adjourned to the dining room where luncheon was served. Following this, a panel of eight members, consisting of the medical and technical directors from each service, presented an informal discussion in which the guests were encouraged to participate. Soon the day was over, and we were rather certain that "a good time was had by all."

It has been suggested that such a program become an annual affair at our school; it provides an interesting and enjoyable means for informing the public about what our profession involves.

Kay Anderson
Barbara Meine
Class of 1956
University of Colorado

You'll Rest Easily

If your life work is undecided—
You don't know what's for you.
Then listen to this carefully,
It may tell you what to do.

If you'd like to work with others,
And you want to be of help,
Physical Therapy is the profession
To help others and yourself.

You will see at first hand,
(If this profession be your goal),
The frailty of the human body,
The spirit of the human soul.

You'll have a chance to do much good,
And to help others on their way.
Nothing will give you more pleasure
When you come to the end of the day,

And you say to yourself, "What have I done?
Have I really done my part,
To help my suffering fellow man?"
The answer is in your heart.

MARY ANN MCINTYRE
Class of 1957
Mayo Clinic

Report from the Mayo Clinic

During the past few months the members of the junior class of the Mayo Clinic School of Physical Therapy have been observing the staff therapists in the departments at the hospital and clinic and we have found that the information that had been pounded into our brains month after month suddenly began to make a lot of sense. Facts became more than just lines in a book, and all the months of work began to take on new meaning as we watched patients and physical therapists working together. Physical therapy which had been a couple of words in a text book, began presenting itself as a live and vital field, and all of us experienced a growing feeling of respect for this profession of ours. The hours spent at the hospital made us observe more closely during the day and dig more deeply into our text books at night.

And then finally, that day for which every student physical therapist anxiously waits suddenly came; we found that we had been assigned a patient of our own. It is now one month and thirty back massages later. The novelty has worn off at least as far as heat, massage, and exercise for the back are concerned. But every day gets more interesting and challenging, as gradually we assume more responsibility for the treatment of patients.

We have just finished a section on progressive resistive exercise and muscle testing in our therapeutic exercise course. During one of the sessions a question came up concerning the best position in which to put the patient when testing the quadriceps muscle. This was followed by other questions concerning the best position in which to do progressive resistive exercise. Some of us are now treating patients who have orders calling for P.R.E. so we were quite interested in the subject.

One of our instructors must have taken a course in education which stressed the fact that you should always capitalize on your students' interest for we are now experimenting on each other in an attempt to determine what we think might be the best position in which to give P.R.E. to the quadriceps and hamstring muscles. It will be interesting (at least to us) to see how our results compare with those of the authorities in the field.

At the end of the month we will have our first evaluation of the results and, although we don't expect to come up with any world-shaking conclusions, we hope it will stimulate interest in the field of research, and cause the students to think more seriously about the following questions:

1. What are the best positions in which to do P.R.E., and why are these considered to be the best?
2. Will the patient derive more benefit from the use of the DeLorme or the Oxford Technic, or is there really any difference in the end result?
3. Will there be any change in the strength of the opposite unexercised part?

What kind of answers have you found for the above questions?

A number of us have spent some time over at the Medical Sciences Building swallowing tubes and being hooked up by electrodes to a vast array of fascinating equipment that buzzed and blinked very much like the control panel of a TV space ship. But I guess going without your breakfast or having an electric current shot through some part of your anatomy is a small price to pay when you stop to think that someday you may be a statistic in a famous paper. Well, at least it's something you can always write home about.

JOYCE OLSEN
Class of 1957

What's New?

There has always been an aura of mystery about the field of "scientific research," even among many medical personnel. Today, with the trend toward more comprehensive research in the field of physical medicine, many workers believe it is time to lift this air of mystery and give students an understanding of what research is all about.

Since physical medicine is a relatively young medical specialty and since much remains to be learned about the modalities it employs, research vitally concerns us as students of physical therapy. In recognition of this need for more workers with some background and experience in research, the Course in Physical Therapy at the University of Minnesota now includes in its undergraduate curriculum a new course entitled "Introduction to Scientific Research." The aims are these:

1. To know the source material available in physical therapy and related courses.
2. To learn technics of finding the desired information.
3. To develop discrimination in reading.
4. To do systematic reading in current literature.
5. To learn the fundamentals of research and the presentation of material obtained.

To this end the course is set up covering two quarters. The first quarter's content is aimed at giving the student an understanding of the meaning and methods of research, with practical experience in scientific writing and its evaluation. This provides background for writing the research paper, using proper technics to obtain material, reading, note taking, revision of material, and typing the final draft in a form suitable for publication. The paper is presented in abstract form to the class.

In the second quarter the students are given an opportunity to select, set up, and conduct a research project. This is done in groups, with other students or patients acting as subjects. Data is collected, interpreted, written, and presented to a medical group. To aid in the understanding and interpretation of data, lectures in biostatistics are given. Then terms such as sampling, variables, reliability, and validity seem less formidable.

Not only do the students obtain an awareness and appreciation of the technics and special problems involved in research but they are given a practical experience in participating on a research team. This may be a challenging field for any one of us. Even if we do not use this in a direct manner, an understanding of the meaning and usefulness of research is essential for our professional growth.

ANNE HOCKING
Senior Class
University of Minnesota

Report from the University of Wisconsin

As graduating physical therapy students we feel we have studied many years, read many books, and listened to innumerable lectures; our minds are still overwhelmingly confused with facts, details, and fragmentary bits of information. But through the maze of knowledge, we have come to realize many ideas—ideals one could almost say—which our faculty members have practiced and taught by example. These thoughts are not worded as such in the classroom, but are the feelings for our new profession and role; they are the basic truths which will help formulate our professional standards and attitudes.

The mechanisms of the living healthy body are profoundly complex; diseased organisms are even more complex. To the many pathological entities, text and research can only answer—"idiopathic etiology." But the compelling drive to know "why" has led many scientists to experiment, then to postulate; the term "idiopathic etiology" is consequently supplemented with several plausible suppositions. As physical therapists we will be dealing with many cases involving perplexing pathologies and our responsibility will be to know the different theories concerning their causes. Even more important will be our privilege and obligation to critically analyze each hypothesis and determine its validity and scientific value.

Continued research in the laboratory or clinic may lead to a revision of the most recently accepted theory on etiology. Within the field of physical therapy new treatment technics may be developed and proved effective. Without continued reading of newly published material and without the background to comprehend these ideas the professional worker certainly shirks his responsibility to his patient, his profession and himself.

Details are essential to the physical therapist, but as students we often lose ourselves in the

minutiae and fail to see the general concepts of our field. We may not visualize the complete rehabilitation program for one patient when we are concerned with a single exercise. And because of our concentration in physical therapy, we may forget that ours is only a part of the patient's total hospital program. We may also lack the feeling of being part of that "team" which is an increasingly important body in most rehabilitation centers. This responsibility to know the details and individual components of a disease, program, or treatment should not detract from our recognition and understanding of the whole.

To a student the name of a disease often means simply a group of characteristics and symptoms as given in the books or in lecture. But in the clinic we see a multiple sclerosis patient, categorize the facts we learn about the patient, recall the advised treatment procedures for the condition, and fulfill the prescription for therapy. We should look at a patient not as a disease entity but as a person with certain physical difficulties; then we can select the most effective approach and, within the limits set by the doctor's prescription, adjust our therapy program for the person's maximum benefit.

These thoughts have been imbued in us by our education in physical therapy. We realize certain duties of our profession and the need for ever expanding knowledge and experience to reach a professional and personal maturity. Our hope is to work toward achieving standards equal to those set before us by our instructors, supervisors, and others already in the profession of physical therapy.

JOAN E. BIASON
Class of 1956

Aided by a Scholarship from the National Foundation for Infantile Paralysis.

Report from the University of Michigan

Just about the time that this issue comes out, 16 eager graduates of the physical therapy curriculum at the University of Michigan will be beginning their first jobs.

Five members of the 1956 class entered the University as freshmen in 1952 when the physical therapy curriculum was established at Michigan. These students, with three transfer students, received their degrees in physical therapy last June. Certificates were awarded to eight members of the class who already held baccalaureate degrees, four from the University of Michigan and four from other universities.

Due to the growing interest in the program it is hoped to increase the enrollment over the present capacity of 16 within the next few years. Eventual transfer to new quarters adjacent to the expanded physical medicine department will facilitate this increased enrollment.

In June 1955 after a brief orientation, the class plunged into concentrated courses in anatomy, kinesiology, and physiology. The extremely hot summer session ended with most of the other students going off on vacation. But the budding physical therapists remained in Ann Arbor to continue with courses in heat, light therapy, and hydrotherapy (including *hot* packs.) Massage, nursing essentials, and muscle testing were a blessing with the return to shorts and halters and cooling massage oil.

After a break between the summer and fall semesters, the students hurried back to full days of lectures and labs. During this period we blossomed out in new white uniforms two afternoons a week and were introduced to clinical routines. Several field trips added variety and proved interesting. At midsemester courses in massage and clinical lectures in orthopedics and neurology ended. In the second half of the semester a course in social and emotional factors in disability was added to the schedule along with lectures in internal medicine and general surgery. Full semester courses continued in therapeutic exercise, pathology, ethics and administration, applied physiology, electrotherapy, and lectures in application of physical medicine technics.

At the beginning of the spring semester, the class split into smaller groups to begin the clinical training program. Three training periods of five or six weeks each were spent at six different hospitals throughout the state of Michigan. Each student spent one period at University Hospital and at two other hospitals which included the Ann Arbor Veterans' Administration Hospital, Bronson Methodist Hospital at Kalamazoo, Mary Free Bed Children's Hospital and Orthopedic Center at Grand Rapids, the Rehabilitation Institute of metropolitan Detroit, and the Sigma Gamma Hospital School at Mt. Clemens. Each facility offered a different type of experience to the student.

Though formalized studies had ended, book work had not. A review of learned material was at least attempted by the class as we prepared for the National Registry exam which we took midway in the training period. Two weeks of

suspense passed before the results were announced; the whole class passed and gave a sigh of relief. Various projects were also assigned at the affiliated hospitals, including case studies, bibliographies, and outside reading related to surgical and medical conditions seen in the clinics.

A Journal Club was formed at University Hospital to further acquaint the aspiring physical therapists with current medical literature. Written and oral abstracts were drawn from current articles; oral reports were presented in seminars, with apprehensive pauses before the "lecturer" asked for "any questions." One series of reports included the training of child amputees, the basis for muscle reeducation technics, the treatment of burns, bracing in cerebral palsy, physical therapy in industrial clinics, and differentiation of shoulder problems.

But all work and no play makes for dullness, and the group was all for breaking up monotony. Along with having a number of active personalities in the class to liven up even the dreariest day, a series of outside activities kept the class on its toes.

Campus activities along with class projects took up the time the class could devote to nonacademic pastimes. The first class function was a lunch time picnic at the Island during the summer session.

A volleyball game between the students and staff of the physical medicine department, that included doctors, physical therapists, and clerks, resulted in a win for the younger team. The staff wore hospital gowns as their official uniform. The students added their comic touch by carrying books labeled "Thiele's Technique" which had stumped all but one of us on an exam given by the head of the department.

Taking part in hospital life itself, the class participated in the Christmas window painting contest and contributed a set of murals for the children's Hubbard tank room. Most of the drawings were done by Renate Quastler, a foreign born undergrad, and Tim Hyma, a graduate student of Ohio Northern University. The murals included scenes of everyday activities of a rabbit family taken from a German children's story, a sketch of Jack and the beanstalk, and an illustration from an American children's story.

"Relief" parties were held at the end of each of the semesters along with a "mystery gift" Christmas party for students and faculty. A reunion was sponsored by the faculty in Ann Arbor at the end of the affiliation period.

The University of Michigan physical therapy class of 1956 anticipates new situations and rewarding experiences as members of the physical therapy profession.

BERNICE PERICIN
Class of 1956

For this edition, we have called upon the students of Region V through the help of Chairman Gail E. Barrand. The varied types of writings submitted have combined to make interesting reading. Thank you all for your work and cooperation.

Sincerely,
AUDREY HAUGAARD

Note to all Physical Therapy Students: Please feel welcomed at all times to submit articles for our Student Section through your regional chairman. This is the Students' section.

Self-Employed Section

The Self-Employed Section will publish each month news of interest to its members and the profession as a whole in this section of the *Review*. Please watch this space for official announcements and decisions relative to the activities of this section.

A report of the proceedings of the annual meeting in New York City will appear in the *Review* at an early date.

Members of the Association who treat private patients are urged to inquire regarding membership in this Section. Contact Harold Feldman, 5900 Van Nuys Blvd., Van Nuys, California.

New Officers Elected

At the annual meeting of the Self-Employed Section held in New York, June 23, 1956, the following new officers were elected:

Recording Secretary—Edward Rathjen, San Jose, Calif.

Treasurer—Routh Dixon, Rocky Mount, N. C.

These two officers were elected for a period of one year to complete terms resulting from resignation.

Robert G. Dicus, San Fernando, Calif. was reelected Section Chairman for a period of two years.

Harold Feldman, Corresponding Secretary and Mrs. Marion Boyer, Vice Chairman, have one more year to serve in their elected offices.

Short-Term Courses

Rancho Los Amigos and Orthopaedic Hospital

Name

A Seminar in Comprehensive Patient Care and Rehabilitation of Selected Neuromuscular Disabilities

Sponsors

Rancho Los Amigos, Hondo, California, and Orthopaedic Hospital, Los Angeles, California

Dates

Oct. 22, to Nov. 10, 1956

Content

First week: General orientation, lectures and demonstrations covering: definition, pathological physiology and prognoses of the diseases; treatment technics; principles of bracing; principles of surgery in rehabilitation; prevocational evaluation, training, and placement

Second week: observation, application and practice of material covered during the first week with actual patient treatment at Rancho Los Amigos Hospital

Eligibility

Graduation from AMA approved physical therapy program

Tuition

$35.00

For further information, application, and data regarding available scholarships, contact:

Mrs. Jean Wright, Educational Secretary
Respiratory Center for Poliomyelitis
Rancho Los Amigos Hospital
Hondo, California

Columbia University

Name

Postgraduate Cerebral Palsy Courses

Sponsors

Columbia University and United Cerebral Palsy Associations, Inc.

Dates

Physicians' Course — Oct. 15 to Nov. 2, 1956; Mar. 4 to Mar. 22, 1957

Physical therapists', occupational therapists' and nurses' course — Oct. 15 to Dec. 14, 1956; Mar. 4 to May 3, 1957

Content

Interdisciplinary approach presented through lecture, clinical affiliation and discussion seminar. Topics cover medical management, basic science review, psycho-social aspects, organization and practical application of theoretical material.

Tuition

Physicians — $100.00

Physical therapists, occupational therapists, nurses: — $210.00 (8 points academic credit granted)

For further information, application, and data regarding scholarship offerings, contact:

Office of the Dean
College of Physicians and Surgeons
Columbia University
630 West 168th Street
New York 32, New York

New York University

During the current academic year, New York University will offer the following series of courses for physicians and surgeons, physical therapists, and prosthetists. These courses will be sponsored jointly by the College of Engineering and the Postgraduate Medical School of the University.

Name of Course

Prosthetic Rehabilitation of the Above-Knee Amputee

Dates of Course

(dates and geographical allocations apply for physical therapists as follows):

Section A—Sept. 27 to Oct. 5, 1956
Delaware, Maryland, Southern New Jersey, Pennsylvania, Virginia, South Carolina, North Carolina

Section B—Nov. 1 to Nov. 9, 1956
Florida, Georgia, Alabama, Mississippi, Tennessee, Arkansas

Section C—Dec. 6 to Dec. 14, 1956
Missouri, Iowa, Minnesota, Wisconsin

Section D—March 28 to April 5, 1957
Kentucky, Southern Ohio, Indiana, Illinois

Section E—May 2 to May 10, 1957
Michigan, Northern Ohio, West Virginia

Section F—June 6 to June 14, 1957
Open

Course Content

Material covered includes biomechanics of fit

(Continued on page 631)

Physical Therapy Programs—1956

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS
OF THE AMERICAN MEDICAL ASSOCIATION

Schools offering the four year program leading to a baccalaureate degree will accept high school graduates, *as well as transfer students.* Schools offering the 12 to 16 months program leading to a certificate will accept students who have completed all or most of their undergraduate work providing they meet certain course requirements. Recipients of a degree or certificate have equal professional recognition and status. For specific information regarding each school's entrance requirements, tuition, and other fees, please write to the director indicated below. All students should investigate course requirements *early.*

	Degree	*Certificate*
CALIFORNIA		
Mrs. Mary J. Dodge School of Physical Therapy Childrens Hospital Society 4614 Sunset Boulevard Los Angeles 27		†
Mr. R. William Berdan School of Physical Therapy College of Medical Evangelists 312 N. Boyle Avenue Los Angeles 33	†	†
Mrs. Margery L. Wagner Curriculum in Physical Therapy University of California The Medical Center San Francisco 22	†	†
Miss Charlotte W. Anderson Department of Physical Therapy University of Southern California University Park Los Angeles 7	†	†
Miss Lucille Daniels Division of Physical Therapy Stanford University Stanford	†	†
COLORADO		
Miss Dorothy Hoag Curriculum in Physical Therapy University of Colorado Medical School Denver 20	†	†
CONNECTICUT		
Miss Frances Tappan School of Physical Therapy U 101 University of Connecticut Storrs	†	
ILLINOIS		
Miss Elizabeth C. Wood Course in Physical Therapy Northwestern University Medical School 303 East Chicago Avenue Chicago 11	†	†
IOWA		
Mrs. Olive C. Farr School of Physical Therapy State University of Iowa University Hospitals Iowa City		†
KANSAS		
Mrs. Ruth G. Monteith Section of Physical Therapy University of Kansas Medical Center Kansas City 3	†	†
LOUISIANA		
Miss Marjorie F. Martin School of Physical Therapy Charity Hospital of Louisiana 1532 Tulane Avenue New Orleans 12		†
MASSACHUSETTS		
Miss Shirley M. Cogland *School of Physical Therapy Simmons College-Children's Hospital 300 Longwood Avenue Boston 15	†	†
Miss Adelaide L. McGarrett Curriculum in Physical Therapy Sargent College, Boston University 6 Everett Street Cambridge 38	†	†
Miss Constance K. Greene Curriculum in Physical Therapy *Bouve-Boston School, Tufts College Medford 55	†	
MICHIGAN		
Miss Virginia Wilson Curriculum in Physical Therapy University of Michigan University Hospital Ann Arbor	†	†
MINNESOTA		
Mrs. Ruby M. Overmann Course in Physical Therapy University of Minnesota 860 Mayo Memorial Hospital Minneapolis 14	†	
Mr. Darrell D. Hunt School of Physical Therapy Mayo Clinic Rochester		†

* Accepts women students only

	Degree	Certificate
MISSOURI		
Sr. M. Imelda, S.S.M. Course in Physical Therapy St. Louis University 1325 South Grand Boulevard St. Louis 4	†	
Miss Beatrice F. Schulz Department of Physical Therapy Washington University School of Medicine 660 So. Kingshighway Blvd. St. Louis 10	†	
NEW YORK		
Miss Dorothy L. McLaughlin *School of Physical Therapy Albany Hospital-Russell Sage College New Scotland Avenue Albany 1	†	†
Miss Mary E. Callahan Courses for Physical Therapists Columbia University College of Physicians & Surgeons 630 West 168th Street New York 32	†	†
Miss Elizabeth C. Addoms Physical Therapy Curriculum School of Education, New York University Washington Square East New York 3	†	†
Miss Mildred F. Heap Program in Physical Therapy University of Buffalo 2183 Main Street Buffalo 14	†	†
NORTH CAROLINA		
Miss Helen Kaiser Division of Physical Therapy Box 3403, Duke Hospital Durham		†
OHIO		
Miss Dorothy Spark Course in Physical Therapy Frank E. Bunts Educational Institute 2020 East 93rd Street Cleveland 6		†
Miss Gladys G. Woods Curriculum in Physical Therapy Ohio State University Columbus	†	†
OKLAHOMA		
Miss Thelma Pedersen School of Physical Therapy University of Oklahoma, Medical Center Oklahoma City 4	†	†
PENNSYLVANIA		
Miss Kathryn Kelley Curriculum in Physical Therapy D. T. Watson School of Physiatrics Leetsdale		†
Miss Dorothy E. Baethke Division of Physical Therapy University of Pennsylvania 1818 Lombard Street Philadelphia 46	†	†
PUERTO RICO (All classes given in Spanish)		
Mrs. Lutgarda Vega de Cruz School of Physical & Occupational Therapy Professional Bldg., 8th floor Stop 22, Santurce		†
TEXAS		
Miss Doris E. Porter Grady Vaughn School of Physical Therapy Baylor University Hospital Dallas 1		†
Miss Ruby Decker Curriculum for Physical Therapists University of Texas, Medical Branch Galveston	†	†
Mrs. Cecelia J. Lee School of Physical Therapy Hermann Hospital Houston 25		†
VIRGINIA		
Miss Susanne Hirt School of Physical Therapy Medical College of Virginia Richmond 19	†	
WISCONSIN		
Miss Beth J. Phillips Curriculum in Physical Therapy School of Medicine Marquette University 561 No. Fifteenth Street Milwaukee 3	†	
Miss Margaret Kohli Course in Physical Therapy University of Wisconsin Madison 6	†	†
U. S. ARMY MEDICAL SERVICE		
*Physical Therapy Course Medical Field Service School Brooke Army Medical Center, Fort Sam Houston, Texas and Brooke, Letterman and Walter Reed Army Hospitals Write to: The Surgeon General Department of the Army Washington 25, D. C. Att.: Personnel Division		†

*Accepts women students only.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Abstracts

Effects of Partial Perceptual Isolation in Mentally Disturbed Individuals

H. Azima and Fern J. Cramer, DIS. NERV. SYSTEM, 17:117-122, April 1956

Mentally disturbed patients in this study were subjected to partial sensory and expressive isolation. The group consisted of 2 patients with hebephrenia, 5 with depression, 2 with obsessional neurosis and 5 with anxiety neurosis.

Each subject was placed in a single hospital room darkened by heavy curtains. The average period of isolation was 4 days. During this time, the upper extremities were encased in cardboard cylinders, the eyes were covered with goggles and the subjects were put on demand feeding and demand evacuation. The patients were checked every hour and tested only once or twice a day for 15 to 30 minutes. Verbal exchange between subject and examiner was kept at a minimum. Therefore, every attempt to decrease external stimulation was made.

Changes in psychodynamics were noted from an analysis of dream fantasies, free associations, figure drawings, and Rorschach tests. All subjects were tested before and after isolation with a partial Wechsler-Bellevue scale and figure drawings. Supportive psychotherapy was used for most patients.

A depersonalization state was elicited from 8 of the patients. Beneficial therapeutic effects were permanent in 2 of the 5 depressed patients, while 8 others displayed an increase in motivation, socialization and self-assertiveness. The 2 patients with obsessional neurosis underwent acute psychotic episodes, and were treated with electric shock which resulted in an improvement in paranoid and obsessional features.

It is believed that the perceptual isolation brings forth a disorganization of psychic structure in the form of visual, auditory, and gustatory hallucinations and paresthesia. This may lead to a psychotic state; however, in most cases it has brought forth a temporary or relatively permanent reorganization of a previously unsteady psychotic state. Therefore, a marked change in mood and a constructive aggression, in lieu of a destructive one, is formed.

Ocular Nerve Palsy Associated with Severe Headache

A.P.B. Waind, BRIT. M. J., (No. 4972): 901-902, April 21, 1956

An association of ocular nerve palsy and severe headache is reported in the literature. In recent years the combined symptoms have been ascribed to pressure upon nerves exerted by supraclinoid aneurysms of the internal cartoid artery. The clinical history and angiography do not support the theory of the etiology being the result of an aneurysm. The condition has also been attributed to orbital periostitis affecting the sphenoidal fissure. For some unknown reason the palsy and headache syndrome is more often found in the diabetic patient.

A clinical history of 3 patients with this condition is discussed in the paper. The 3 patients had several factors in common: (1) all were over 30 years of age; (2) each had complete third nerve palsy; (3) severe pain over the fifth nerve distribution was noted; and (4) all had complete recovery from the palsy and pain in several months without specific treatment. Two of these patients were diabetic.

The noteworthy feature of this syndrome is that recovery takes place within a relatively short period of time. It is not specific for diabetes.

Pseudocoxalgia

A.H.C. Ratliff, J. BONE & JOINT SURG., 38-B: 498-512, May 1956

A review of 50 cases of idiopathic pseudocoxalgia (Legg-Calvé-Perthes disease) followed into adult life for periods of 11 to 30 years (average 17 years) after diagnosis showed:

1. In the whole series rather more than one third of the patients developed hips which were normal or nearly normal.
2. An equal number had hips which could only have been considered "fair."
3. About one-quarter had hips which were painful and which showed marked loss of movement and gross degenerative changes radiologically.

Judged from the point of view of symptoms, the results were better than the foregoing would suggest. Three quarters of the patients were fully active and free from pain but only two-fifths had hips which were radiologically good. It is possible that such apparently good results are unlikely to be permanent, and a follow up in another 10 or 15 years is planned. It can, however, be concluded at this stage that an immediate good result is likely to be maintained at least until the age of 25 years, even though half of such patients will have radiologically abnormal hips.

There is a characteristic pattern of deformation of the femoral head and neck in the adult resulting from this condition in childhood, based on the degree of flattening of the head and shortening the neck.

The end-results are better in adequately treated cases.

Two cases are reported in which osteochondritis dissecans developed as a late complication.

Physiotherapy in Pregnancy, Labour and the Puerperium

Andrew M. Clave, BRIT. J. PHYS. MED., 19: 97-99, May 1956

At Leeds Maternity Hospital over half the patients since 1944-46 have been through an antenatal course under the physical therapist. Labor involves considerable muscular effort for which the mother should be suitably trained. She should be as fit as possible and should learn to control the muscles which she will be using. The training involves a simple explanation of the stages of labor, instruction in relaxation before labor so that when labor comes it will be second nature for the patient to relax during first stage contractions, and training in explusion technic when the second stage is reached. The patients are not given the impression that this training will make pain-relieving drugs superfluous. The mother is assured that if the discomfort becomes intolerable, a suitable analgesic will be given.

A physical therapist is on duty day or night to help the patient carry out what she has learned. No extravagant claims are made for antenatal preparation. The main benefit is psychological. The physical therapist can also help in establishing breast feeding in the patient. After childbirth it is important to get the mother back to her maximal physical efficiency as soon as possible. Early ambulation and regular exercise are associated with better involution and quicker recovery.

Physical therapy can be of great value in helping the patient to overcome stress incontinence.

Over a third of all obstetric patients are confined at home. The only member of the obstetric team who is bound to see these patients frequently and regularly during pregnancy and to be present at the time of labor is the midwife. The author makes the suggestion that it would be possible for the physical therapist to give midwives enough instruction in elementary physical therapy to enable them to hand on to their patients a modified but still beneficial form of preparation.

A Study of the Association of Prenatal and Paranatal Factors With the Development of Tics in Children

Benjamin Pasamanick and Ali Kawi, J. PEDIAT., 48:596-601, May 1956

The etiology of tics has been attributed to organic or psychologic factors or to a combination of these factors. It is believed that tics in children may perhaps be associated with minor abnormal prenatal or paranatal conditions. There are clinical indications that cerebral injury might be implicated in the development of some tics in children. Tics and prenatal or paranatal injury both occur more frequently in males than in females.

In Baltimore, Maryland, records have shown that tics occurred in 83 children born after 1926. Tics are, therefore, among the less common neuropsychiatric disorders of childhood. Sixty-five, or 83 per cent, of these Baltimore cases were males.

Of the 83 children only 51 had been born in hospitals where information about their birth history was available. These children with tics were compared with 51 control children. The next child born in the same hospital after the child with a tic was chosen as the control. A comparison of the various complications of pregnancy was performed. A total of 21 complications occurred among the experimental cases as contrasted to 10 in the control. A significant correlation of tics with prematurity or infant abnormalities was not found.

Childhood tics should be considered as a symptom rather than as a clinical entity. This condition is probably related to minor brain damage occurring during prenatal or paranatal periods.

The Hysteroid Aspects of Hypnosis

Ainslie Meares, AM. J. PSYCHIAT., 112: 916-918, May 1956

The mental disturbance of hysteria and the state of hypnosis are closely associated. Since there is such a close relationship, some authorities believe they have a similar origin. In both conditions there is a tendency to "act," to play the part, and to move in a trance.

The reaction to hypnosis is in general the acceptance of a suggestion but it also has other characteristics. In the hypnotized state almost all suggestions are accepted, while in the normal waking state a person is more selective. The hypnotic act is performed oddly, as if in pantomime, in an exaggerated manner.

Hysteroid mechanisms in hypnosis are further manifested as ego defenses. The subject carries out the suggestion, but at the same time demonstrates some of his own integrity in the manner of acting. He also subconsciously acts to some extent in the manner that he thinks a hypnotized patient should act. He may also use association. For example, on the command "to relax," some patients may sleep, others may sit or walk—whatever pattern they may associate with relaxation.

All of these characteristics of the hypnotized patient are also present in hysteria. The hypnotic state is a defensive mechanism of hysteria.

The Chronic Subluxating Ankle

John H. Kelly and Joseph M. Janes, ARCH. SURG., 72:618-621, April 1956

This paper describes and illustrates the Waston-Jones reconstruction of the fibular collateral ligament of the ankle as a very successful operation for the treatment of the chronic subluxating ankle. It includes reports on 7 patients for whom this operation was carried out at the Mayo Clinic between January 1950 and April 1954 and who have been followed for at least a year postoperatively. Their ages ranged from 18 to 54 years.

The average duration of symptoms was 7 years. Original sprain in each case was treated lightly, and subsequent sprains were reported. Intermittent pain, sense of insecurity, and swelling were the commonest complaints. Injury to the anterior talofibular ligament and the calcaneofibular ligament produced the greatest instability. It is important to include both ankles when x rays are taken because approximately 5 per cent of the population show some degree of tilting of the talus, a condition called hypermobile hindfoot.

Conservative treatment includes use of a wide heel or an outer-heel wedge, exercises for the peroneal muscles, and a short leg brace with an outer T-strap to prevent inversion.

Surgical treatment utilizes the peroneus brevis tendon, which is severed from its muscular origin and run through drill holes in the fibula and talus at the level of the sinus tarsi and then back through a drill hole in the fibula at which point the tendon is attached to itself. The advantage of this procedure is that it restores the important anterior talofibular ligament by means of a tendon which is not likely to stretch.

Six of the cases reported showed excellent results. The ankle became stable and was free of pain and swelling. The seventh case had only a fair result due to osteoarthritis of the ankle preoperatively. Other cases have reported excellent results from this procedure; in fact, very few failures have been reported.

Current Results in Treatment of Tuberculous Meningitis and Miliary Tuberculosis

John Lorber, BRIT. M. J., (No. 4974): 1009-1011, May 5, 1956

During 1954, 20 new patients with tuberculous meningitis were admitted to Children's Hospital, Sheffield, England. The children ranged from 4 months to 13 years of age. Five of these patients also had miliary tuberculosis. Positive diagnosis was confirmed by a positive tuberculin test and changes in the cerebrospinal fluid.

Treatment consisted primarily of intrathecal injections of streptomycin. Each child received at least 25 injections beginning with daily injections and then reducing the frequency. Ancillary treatment by anticonvulsants, isoniazid and P.A.S., physical and occupational therapy were employed as indicated.

After an average observation period of 21 months, 19 patients were alive and their treatment was terminated. Of these 19 patients, 18 had no evident neurological or mental sequelae.

It is believed that the intrathecal injections of streptomycin were of significant benefit to these patients.

The survival rate was good and protein in the spinal fluid returned to normal sooner than in previous studies omitting streptomycin. It may be possible to reduce further the number of injections.

Of 69 consecutive children admitted during 1952-54, 59 are alive. Of the 59 children who were conscious on admission, 54 survived. Early diagnosis and efficient treatment should soon result in a recovery rate approaching 100 per cent.

Osteoarthritis

J. Trueta, LANCET, (No. 6923): 585-589, May 5, 1956

Osteoarthritis or arthrosis is one of the more common disorders. This investigation was primarily undertaken to learn more about the pathological changes of the disease. The chief factor believed to be responsible for the initiation of the degenerative changes is the irregular distribution of intra-articular pressure. In decreasing order of severity and frequency of occurrence, the spine, hip, knee, and then ankle joints are affected.

The disorder begins first with a degeneration of the cartilage. A vascular proliferation is responsible for changing the cartilage of the nonweight-bearing area into bone and also for weakening the resistance of the bone in the weight-bearing area. The bone becomes more highly vascularized and sclerotic, and bone cysts develop.

A study was undertaken on rabbits in which it was illustrated that stress and pressure cause changes in cartilage and bone. The knee of a growing rabbit was placed and splinted within a compressing frame with pins through the femur and tibia. After some time under pressure, the joint and bone of the rabbit were studied at autopsy. Evident were: (1) an increase in the thickness of the growing cartilage; (2) some sclerotic thickened bone trabeculae; (3) bone cyst; and (4) degenerated articular cartilage. If the pressure was removed and the animal lived for a few days before examination, the regeneration of the ischemic area by new vessels was immediate. Thus, experimentally the bone changes caused by ischemia seemed to stimulate the formation of bone by vascular proliferation.

This study supports the belief that excessive tissue pressure is the primary cause of osteoarthritis. The combined action of gravitational and muscular stresses cause the pressure. Pain and muscular spasm limit the movement of the joint and contribute to joint destruction.

Muscular Dystrophy VIII. Trials of Protein Hydrolysate, Vitamin Supplements, and Physical Therapy

J. S. Donaldson, M. J. Wratney, A. Pascassio, F. A. Weigand, and T. S. Danowski, AM. J. DIS. CHILD., 91: 449-453, May 1956

It has been reported recently that a regimen of protein hydrolysate together with a vitamin preparation produces distinct clinical improvement in muscular dystrophy. This paper reports on a study of 29 children with muscular dystrophy who were placed on such a program. Serial measurements of muscle strength were made in the following three groups of patients: (a) children with muscular dystrophy not under treatment or just receiving vitamins, (b) those maintained on protein hydrolysate and vitamin supplements without physical therapy, and, (c) children maintained on the protein-hydrolysate-vitamin regimen while receiving physical therapy. A physical therapy program for children with muscular dystrophy is outlined.

The results indicate that deterioration had occurred in some of the patients irrespective of whether or not they received hydrolysate and extra vitamins alone or in conjunction with physical therapy. The study has not been pursued long enough for the authors to be certain whether or not the rate of deterioration was altered by the programs followed. However, none of the patients responded with dramatic improvement.

Interesting comments were made by the physical therapists participating in this study. They noted that those patients who were ambulatory had developed peculiarities of gait and posture which permitted maximum utilization of their remaining muscle strength. This made them more adept and as a consequence led the family to believe that muscle strength had actually increased. It was also noted that these children who have flat feet or eversion continue to walk in a normal manner, whereas those who have good arches go into an equinus position.

The Anterior Tibial Syndrome

G. E. Mavor, J. BONE & JOINT SURG., 38-B: 513-517, May 1956

A case of persistent exercise ischemia affecting the anterior tibial group of muscles was described in this article. Acute ischemia of the anterior tibial muscles with consequent replacement fibrosis or, in more severe cases, necrosis of muscle is a well recognized entity and has received much attention in the literature.

The case described in this paper fully supports the diagnosis. The nature of the anterior tibial pain suggested ischemia because it was constantly related to excessive exercise. The patient was a professional football player and exhibited bulky, highly developed muscles. The presence of a small muscle hernia over the upper third of the anterior tibial muscles on each side indicated the possibility of excessive pressure in the anterior tibial compartment.

The subject did not complain of pain at rest or after walking or moderate exercise. Upon heavy exercise the pain gradually became more severe until the patient was forced to rest. The left leg was more severely involved than the right. There was no history or evidence of claudication, pallor on exercise, injury, phlebitis, or peritendinitis.

Since the patient did not wish to change his occupation, a decompression operation of the anterior tibial compartment was performed with great success.

Pathogenesis and treatment of the condition are discussed.

Radcliffe Respiration Pumps

W. Ritchie Russell, LANCET, (No. 6922): 539-541, April 28, 1956

Artificial respiration by intermittent positive pressure through a cuffed tracheotomy tube was introduced in 1953 by Lassen and Ibsen. This method has been useful in such conditions as poliomyelitis, polyneuritis, and tetanus when the throat as well as respiratory muscles are paralyzed.

In the first Radcliffe respiration pump, the positive pressure wave was effected by the free pressure of a weight on bellows. It is reliable, durable, capable of speed regulation, and works both on 230-volt A.C. and 12-volt D.C.

The newest design of the Radcliffe

respiration pump has also a negative pressure phase. This is to facilitate the venous return to the right heart. The negative-pressure phase is also gravity-operated and designed to provide negative pressure from 0 to -10 cm. water. The complete apparatus is mounted on a trolley, and works on both direct and alternating currents.

Our Abstractors for September

We are indebted to the following for their assistance in preparing the abstracts for this issue:

Marcia Field Judith Kurtz

Book Reviews . . . . .

The Pediatric Years. *By Louis Spekter, M.D., M.P.H., F.A.A.P., Director, Bureau Maternal Child Hygiene, Connecticut State Dept. of Health; Formerly Chief, Division of Crippled Children, Clinical Instructor in Pediatrics, School of Medicine, Yale University; Certified by the American Board of Preventive Medicine and Public Health. Cloth; price $12.50. Pp. 734; illus. Charles C Thomas, Springfield, Illinois, 1955.*

In a comprehensive preface, Dr. Spekter says this book is "a technical volume designed specifically for the nonmedical members of the team who work with children." He lists 40 such "team" members, ranging from audiometrists to vocational guidance workers. The list is not in alphabetical order; physical and occupational therapists are second and third, respectively. It is a cliché to rate a book "encyclopedic in scope" and I shall not risk it, but the book really *does* cover a wide field! Moreover, it is well and logically organized.

The first Section states that optimum child health depends upon healthy (normal) birth. Here the discussion is rather sharply focussed upon problems of maternal care, a fact which stresses an environmental role at the expense (and even detriment) of hereditary possibilities. In an age where medical genetics is of increasing import there should at least be recognition of extrinsic *plus* intrinsic factors.

The second Section states that optimum child health is based on knowledge of growth and development. In the area of physical growth, height and weight, scored on the Stuart (Harvard) percentile charts, are the only measures dealt with. The whole theme of biological (skeletal) age is not considered. The behavioral unfolding follows a Gesellian pattern. There are chapters upon prematurity, upon the examination of the ill child and the well child, and upon adoption. The chapter on nutrition follows NRC standards. Adolescence is covered in a little over two pages.

The third Section is really the core of the book, and in it Dr. Spekter hits a fast pace. After discussing congenital defects, accidents, chronic illness, the psycho-social care of the hospitalized child, and convalescence, he notes nutritional diseases, tumors and cancer. Following this is a chapter (14 pages) on physical medicine, which covers physical therapy, occupational therapy, and rehabilitation. Methodology and technics, rather than philosophy or approach, are stressed. There then follow nearly 400 pages on the various and several diseases of childhood, usually discussed systemically, as digestive system, cardiovascular system, etc. Along with this sort of material are chapters on dental care, posture and care of the feet, cerebral palsy, defective vision, and certain problems or aberrant patterns of personality and behavior. I found this whole Section (via the sampling method) to be uniformly instructive and stimulating.

The fourth Section discusses the structure of the professional health-worker system and available public facilities. Since Dr. Spekter is Director of the Bureau of Maternal and Child Hygiene, Connecticut State Department of Health, the discussion centers around a well established, working program. The fifth Section is really a corollary of the fourth, for it elaborates the ideals which must go into the development of the highest ethical standards in the entire socio-community care of the child.

The volume ends with a final Section upon pediatric procedures, as blood tests, urine tests, and so on.

There are bibliographic references at the end of most chapters.

All in all, this is a book that will "wear well." If it is on your desk, or on your shelves, you'll pick it up ever and anon for a quick and reliable reference.

Physiotherapy in Some Surgical Conditions. *By Joan E. Cash, B.A., M.C.S.P.* (Teacher's Certificates). *Foreword by Professor F.A.R. Stammers, C.B.E., F.R.C.S. Cloth; Price $5.00. Pp. 350; illus. J.B. Lippincott, Philadelphia, Montreal, 1955.*

The author of this book, an English physiotherapist, has had wide hospital experience working in cooperation with surgeons who have kept pace with the new development in surgery. Her object in writing this book is to show why physical therapy is of value in the treatment of some diseases and injuries treated by surgeons. She states the purpose of physical therapy in most surgical conditions is to assist in the prevention of or treatment of complications and for that reason the complications rather than the diseases are discussed. Throughout the book this plan is followed in order that the physical therapy may be more intelligently applied and therefore more effective.

The first two chapters of the book, on wounds and local infections, were written by a colleague of the author, Miss B. Chatwin, M.C.S.P. A chapter on burns follows and another entitled "The Part Played by Physiotherapy in the Treatment of Complications Common to all Operations." Three chapters are devoted to thoracic surgery, three to neurosurgery, two to soft tissue injury and seven chapters are on fractures. The author purposely has not included congenital or acquired deformities and other specific orthopedic conditions which she believes should be covered in a separate book. The book contains 26 plates and 24 line drawings illustrating surgical conditions and physical therapy technics. A classified bibliography is included.

As each subject is dealt with there is a brief discussion of the anatomy of the area involved, its function, the pathology which exists, the usual surgical procedure and the complications which may develop. With this basic knowledge the type of physical therapy which will be of value may be selected. The technic which is used is given in detail and routine treatment without rationale is discouraged. In many of the surgical conditions the physical therapy procedures are given for both the preoperative and postoperative stages of the surgical care.

In this country some of the conditions which are discussed are rarely referred to the physical therapy department and a few of the physical therapy procedures, such as the use of ultraviolet with a rod applicator

within a draining sinus in lymphadenitis, are seldom prescribed.

The author has succeded in presenting a large amount of practical information on a broad subject, in a concise and readable form. In the opinion of this reviewer the outstanding feature is the emphasis which is placed on "why" each procedure of physical therapy is beneficial. This book should be a useful reference for the physical therapist and good supplemental reading for the physical therapy student.

Postural Back Pain. A Monograph in American Lectures in Orthopedic Surgery. *By Milton C. Cobey, M.D., F.A.C.S. Professor of Orthopedic Surgery, Georgetown University Medical School, Washington, D.C. Leatherette; price $3.00. Pp. 78; illus. Charles C Thomas, Springfield, Illinois, 1956.*

Diagnosing the etiology of back pain is the crux in to determining the type of medical treatment and the place of physical therapy in the program. Some postural deviations are caused by habitual poor mechanical adjustments of body segments. Some postural deviations are caused by organic diseases. Mechanical deviation alone can sometimes cause severe symptoms in the extremities. Treatment involves educating the adult and encouraging him to maintain his exercise routine. The child should be reached by example of parents and through early prevention by use of firm sleeping surface, proper desk seating, proper guided physical activity for prevention and correction of common posture defects.

In 78 pages the coverage is: (1) Orthopedic examination of the four spinal areas with mention of some pathological possibilities which can cause physical defects of increased anatomical curves and loss of motion of the spine. (2) Postural disease syndromes of the four spinal areas for which posture alignment exercises are specific. (3) Care of the Posutral Back. (4) Early Care and Management to Insure Good Posture. (5) Glossary to explain the medical words in the book. (6) Bibliography of 95 books and articles from 1923 to 1954.

One idea I have been using for several years in posture instruction is stated at the last: The only members of the trunk and four extremities "that can be disregarded are the shoulders and upper extremities, for if the posture is good, their bodily positions will be correct." This monograph is useful to have on the shelf for loan to new staff personnel or medical interns or other allied medical personnel.

An Intoduction to Pool Exercises. *By Elizabeth Bolton, M.C.S.P., H.T., Diploma of Bedford Physical Training College and Diana Goodwin, M.C.S.P., H.T. Foreword by J.W.T. Patterson, M.D., F.R.C.P. Ed., Paper; 48 pp.; 39 illus. E. & S. Livingstone Ltd., Edinburgh and London, 1956.*

It is amazing the amount of material that the authors have packed into this 48 page booklet. As the name implies, the book is intended as an introduction to underwater exercise and the material presented is by no means comprehensive. The book is divided into the following sections: Physics, Advantages, Contraindications, Care of the Patient, Duration of Treatment, Apparatus for Exercise, Progression in Muscle Re-education, Isolation of Movement, Classwork, Exercises, Recreational Activities, and Bibliography.

In the introduction the authors state that the physical therapist "should accustom herself to the fact that she is using a different (exercise) medium" . . . and that "water exercises should be considered in their own right and not as exercises borrowed from the gymnasium." This is sometimes a difficult concept to the physical therapist accustomed to working almost exclusively using air as a medium. However, the authors have approached the problem by first presenting a clear summary of the basic physical principles underlying underwater exercises. From establishing the "why" of pool exercise, they have moved logically toward the main section of the book —that on exercise. In this section an individual joint movement is selected and the position given for exercises 1) assisted by bouyancy, 2) moving in the horizontal plane, and 3) resisted by bouyancy. This area is well illustrated by means of stick diagrams. Various recreational activities for the pool complete the text. Of interest to those dealing with pool therapy will be two inserts in the back of the book showing progression in teaching the crawl, back crawl, and breast strokes to music.

Your reviewer wished that more time had been devoted to stabilization methods and that the section on apparatus had been illustrated. However, these are small faults in an unusually good introductory book. The beginner in underwater exercise should have little difficulty working out an acceptable program from study of this book and should be stimulated to go much further in developing programs using water as an exercise medium. The authors should be encouraged to expand these introductory concepts into a more comprehensive work on this increasingly important subject.

Poliomyelitis. Papers and Discussion from the Third International Poliomyelitic Conference in Rome. *International Poliomyelitis Congress. Cloth; price $7.50. Pp. 567; illus. J. B. Lippincott Co., Philadelphia, 1956.*

This volume presents in an encyclopedic manner the newest advances in medicine referable to poliomyelitis as epidemiology, microbiology, histopathology, neurology, physiology, orthopedic surgery, pediatrics, physical therapy, and public health.

Introductory reports concerning the social impact of disease on the various countries represented were followed by the discussions of the latest developments of diagnosis and treatment.

The section on the Acute Medical Care of Poliomyelitis presents worthwhile papers and an interesting discussion of the basic physiology, pathology, respiratory difficulties, and manner of treatment of the acutely ill patient.

Infection and immunity to poliomyelitis were discussed freely with representation of the opposing point of view of the best type of vaccine to be used and much basic epidemiology is included in the formal presentations and discussions. This section is particularly valuable to anyone who wishes to arrive at a reasonable point of view referable to the prevention of this disease in an area where perhaps too much enthusiasm and wishful thinking has prevailed.

The section on orthopedics is somewhat disappointing in that the portion dealing with the care given in the United States is brief and out of date. The remainder of the section by an Italian is enthusiastic, beautifully illustrated and provocative. Certain technics are presented that have not withstood the test of time. In general, this section does

not represent the fine work done on behalf of the poliomyelitic patients on the continent of Great Britain or in these United States.

The section on rehabilitation is well done and represents the trends in physical therapy and functional training in various countries throughout the world. Here again, the discussions are most stimulating and various of the controversies are touched upon.

A section is devoted to trends in poliomyelitis throughout the world and this is both a summarizing and forecasting discussion in the various areas of microbiology, neurology, and orthopedic care.

Noteworthy is a section on scientific exhibits and this perhaps is one of the most interesting portions of the entire volume. For here have been selected many of the outstanding research projects throughout the world, presented with beautiful illustrations, and summaries in a most interesting manner. Not to be neglected in the reading of this volume is a short, pertinent, and profound address by Pope Pius XII. It is both a challenge and a guide to all those who devote any portion of themselves, their time, talent, or their energies in the field of poliomyelitis.

This encyclopedic volume is a worthy successor to the previous two volumes on poliomyelitis representing the papers and discussions of the International Poliomyelitic Conferences. The Volume is well edited, beautifully printed and illustrated, and is indispensable in the library of students of poliomyelitis.

Understanding People in Distress. *By Barney Katz, M.D., Ph.D., F.A.P.A. Clinical Psychologist; and Louis P. Thorne, Ph.D., Professor of Education and Psychology, University of Southern California. Former Director of Psychological Clinic, University of Southern California. Cloth; price $4.00. Pp. 357. The Ronald Press Co., New York 1955.*

The authors of this book are both clinical psychologists who apparently have had considerable experience in writing on the layman level in addition to more technical material for educators and psychologists. Their experiences are reflected in the fact that they write well and in simple language. Their ideas are expressed directly so that there is no equivocation. It is too bad that these qualities are expended on just another book on "popular psychiatry."

This is really a nontechnical book in psychiatry. The general format is that of most psychiatric textbooks in that it discusses etiology, phenomenology, and finally treatment. The material is divided into chapters which comprise the usual entities. It errs in oversimplification but judging from the intended audience this is perhaps excusable. Most of the interpretation and formulations are superficial. The examples chosen to extol the glories of psychotherapy are misleading in that therapy never fails. The process is usually summed up in one sentence to the effect that after a certain number of months of therapy the patient was better adjusted. The type of therapy, if this reviewer can judge from the examples, is a rather directed procedure of explanations and manipulations. In spite of such criticisms the authors' approach to the subject is quite logical and the book is well done.

It is a book which may appeal to the intelligent laymen interested in getting a bird's eye view of psychiatry. Students in psychology or ancillary fields may use it profitably —for example, physical therapists who wish some orientation. It would probably be disturbing to a person who has emotional problems and turns to this book for help.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

Our Book Reviewers for September

Gertrude Beard, Director of Physical Therapy, Bethany Hospital, Kansas City, Kansas.

Dorothy I. Glidden, Capt. AMSC, Chief, Physical Therapy, U. S. Army Hospital, Fort Polk, Louisiana.

Mary Elizabeth Kolb, Instructor, D. T. Watson School of Physiatrics, Leetsdale, Pennsylvania; Assistant Editor, *Physical Therapy Review.*

Wilton M. Krogman, Ph.D., Professor of Physical Anthropology, Graduate School of Medicine, University of Pennsylvania; Director, Philadelphia Center for Research in Child Growth, Graduate School of Medicine.

Carl D. Martz, M.D., Clinical Professor, Orthopedic Surgery, Indiana Medical Center, Indianapolis.

Irving C. Sherman, M.D., Clinical Professor and Chief of Division of Neurology, Chicago Medical School, Chicago.

New York University

(continued from page 623)

and alignment, principles and procedures in prosthetic fabrication, gait analysis, check out procedures, gait and activity training, postoperative care, stump conditioning, clinic team operation and other pertinent material.

Tuition

$75.00

Name of Course

Prosthetic Rehabilitation of the Upper Extremity Amputee

Date of Physical Therapists' Course

February 18—March 1, 1957

Course Content

The course includes lectures, demonstrations, laboratory and clinical practice and is designed primarily to provide qualified physical therapists with knowledge and technical competence in preprosthetic and prosthetic training.

Tuition

$100.00

For further information and application blanks address:

POSTGRADUATE MEDICAL SCHOOL
550 First Avenue
New York 16, New York

What's New . . . . . .

160. Orthopedic Back Rest

Revelation Orthopedic Back Rest is light in weight, firm and is available in colors which harmonize with home and office decor, as well as automobile upholstery. According to the manufacturer this back rest is especially built for patients whose physicians recommend a proper back support. Crestview Service Center.

161. Wheel Chair Cushion

Here is an adaptation of the posture correction principle of Sacro-Ease. It is a 17" x 17" cushion that uses a floating frame suspension to bridge sling-seat area of folding wheel chair and maintain a level, comfortable sitting plane. Floating frame prevents any pressure points. One-piece rubber sleeve provides proper body weight distribution. It is reversible for soft or firm surface. McCarty's.

For more information on items write to The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

New items which may be of interest to physical therapists will be mentioned in these pages each month. The accompanying explanations are made by the manufacturers and have not been investigated by the *Physical Therapy Review*.

162. Resistive Exercise Device

According to the manufacturer, the N-K Exercise Unit is designed to make progressive resistance more effective and convenient to administer. Hamstrings and quadriceps exercise can be given without moving the patient. There are no cuffs, buckles, straps or foot attachment device. Resistive or assistive exercise may be administered for all conditions involving the knee joint. The built-in ROM indicator assists in patient motivation. The durable lever-arm mechanism makes it possible to select from any of several resistance patterns. N-K Products Company.

Improved FRANKLIN TILT TABLE

COMPARE DESIGN • QUALITY • PRICE!

MODEL T-100 PRICE $641.00

New MODEL T-101 PRICE $395.00

Write for descriptive literature.

The Model T-100 Tilt Table we introduced two years ago received prompt acceptance in the rehabilitation field and has served it well since then. Now, in answer to professional suggestions, we have completely re-designed the Model T-100 to improve its handling and use potential and to bring it within the price range of even the smallest of hospitals.

IMPROVEMENTS

- Height reduced from 34" to 32" for easier transfer of patient.
- Strength and rigidity has been increased by all-welded construction.
- Hinged foot-board folds out-of-the-way when use as a treatment table is desired.
- Trendelenberg position (to 10°) is now possible, as well as the full-standing (90°) position.

NEW PRICE—MODEL T-101		OLD PRICE—MODEL T-100	
Tilt Table, including Mattress, Cervical Bar, Abdomen Strap, Knee Strap, Crating	$395.00	Tilt Table	$511.00
		Mattress	47.00
		Cervical Bar	27.00
		Abdomen Strap	24.00
		Knee Strap	16.00
		Crating	16.00
			$641.00

Auxiliary equipment including Crutch Arms, Hand Grips, Arm Sling Suspensions, Slings and Foam Rubber Mattress, are available at proportional savings.

ALL PRICES F.O.B. NEWARK, N. J

FRANKLIN HOSPITAL EQUIPMENT CO.

116 Academy Street, Newark 2, N. J. Phone: MArket 2-5187

Designers and Manufacturers of Hospital Equipment

INVALEX CO., INC. OF LONG BEACH CALIF.

DISTRIBUTORS FOR

INVALID WALKER & WHEELCHAIR CO.

INVALEX

CALIFORNIA MALIBU

CALIFORNIA MALIBU (FOLDED)

INVALEX FOLDING

CALIFORNIA

INVALEX CEREBRAL PALSY WALKER

IF NOT CARRIED IN STOCK WE WILL CONSTRUCT IT TO MEET YOUR NEEDS

WILL BE SHOWN AT BOOTHS 23 & 24

INVALEX INFANT WALKER

INVALEX BABY WALKER

THE MOST COMPLETE LINE OF WALKERS IN THE INVALID AND SICKROOM FIELD

CALIFORNIA

INVALEX (RIGID)

CALIFORNIA LAGUNA

CALIFORNIA MANHATTAN

INVALEX

Index to Current Literature

ADMINISTRATION

What is a Supervisor? Edith M. Lentz, Nursing Outlook. 4: 336-337, June 1956

AMPUTEE

Amputation of the Lower Extremities. John B. McKittrick, G. P., 13: 104-113, May 1956

Neuromuscular Performance and Sensory Receptivity in Triple Congenital Amputee. E. Jokl, H. H. Kessler and E. W. Straus, J.A.M.A., 161: 439-440, June 2, 1956

Quadriceps Cineplasty in a Patient with Bilateral Lower-Extremity Amputations. A. W. Spittler and J. W. Batch, J. Bone & Joint Surg., 38-A: 677-680, June 1956

ARTHRITIS

Alkaptonuric Arthritis. A. J. Harrold, J. Bone & Joint Surg., 38-B: 532-538, May 1956

CEREBRAL PALSY

Cerebral Palsy: Methods of Treating the Neuromuscular Disabilities. George Deaver, Arch. Phys. Med. & Rehab., 37: 363-368, June 1956

CIRCULATION

The Clinical Aspect of Cerebral Anoxia. G. H. Monrad-Krohn, Acta psychiat. et neurol. Scandinav., 31: 87-105, 1956

DYSTROPHY

Heredofamilial Juvenile Muscular Atrophy Simulating Muscular Dystrophy. E. Kugelberg and L. Welander, Arch. Neurol. & Psychiat., 75: 500-509, May 1956

EDUCATION

Human Relations Content in the Basic Curriculm. Kathleen Black, Nursing Research, 5: 4-17, June 1956

The Social Worker as a Teacher in Medicine. W. W. Schottstaeott and M. E. Gwinn, J.A.M.A., 161: 318-320, May 26, 1956

ENDOCRINOLOGY

Hypoplasia of the Pituitary and Adrenal Cortex. H. David Mosier, J. Pediat., 48: 633-639, May 1956

FRACTURES

The Naviculo-Capitate Fracture Syndrome. Richard L. Fenton, J. Bone & Joint Surg., 38-A: 681-684, June 1956

GERIATRICS

Studies of the Process of Aging. R. H. Dovenmuehle and E. W. Busse, Brit. J. Phys. Med., 19: 100-103, 1956

HEMIPLEGIA

Cerebral Hemodynamics and Rehabilitation Potential of Patients with Cerebral Vascular Disease. J. F. Fazekas and J. J. Buchanan, Arch. Phys. Med. & Rehab., 37: 360-362, June 1956

Electrocardiographic Observations in Patients with Cerebrovascular Accidents. F. Wasserman, G. Choquette, R. Cassinelli, and S. Bellet, Am. J. Med. Sci., 231: 502-510, May 1956

NEUROLOGY

Chronic Postherpetic Neuralgia. L. S. Van Blaricom and G. Horrax, J.A.M.A., 161: 511-515, June 9, 1956

OCCUPATIONAL THERAPY

Some Questions and Answers on Occupational Therapy. Mrs. R. Greenler, Crippled Child., 33: 4-5, April 1956

ORTHOPEDICS

Arthrogryposis. A Clinical and Pathological Study of Three Cases. A. Kanof, S. M. Aronson and B. W. Volk, Pediatrics, 17: 532-540, April 1956

Arthrogryposis Multiplex Congenita. R. M. Fitti and T. M. D'Auria, J. Pediat., 48: 797-800, June 1956

Familia Infantile Coxa Vara. H. G. Almond, J. Bone & Joint Surg., 38-B: 539-544, May 1956

The Importance of Plantar Muscles in Paralytic Varus Feet. The Results of Treatment by Neurectomy and Myotenotomy. R. W. Coonrad, C. E. Irwin, T. Gucker and J. B. Wray, J. Bone & Surg., 38-A: 563-566, June 1956

Lumbosacral Fusion Results with Early Ambulation. Melvin Brent Watkins and Everett C. Bragg, Surg., Gynec. and Obst., 102: 604-606, May 1956

Meniscus Injuries of the Temporomandibular Joint. C. M. Silver, S. D. Simon and A. A. Savastano, J. Bone & Joint Surg., 38-A: 541-552, June 1956

Multiple Epiphysial Dysplasia. Edmund Shephard, J. Bone & Joint Surg., 38-B: 458-467, May 1956

The Osteogenetic Phases of Regeneration of Bone. Wolfgang Axhausen, J. Bone & Joint Surg., 38-A: 593-600, June 1956

Posterior Dislocation of Both Shoulders. G. P. Arden, J. Bone & Joint Surg., 38-B: 558-563, May 1956

Transient Synovitis of the Hip. N. W. Rosenberg and E. E. Smith, J. Pediat., 48: 776-781, June 1956

Vascular Complications of Shoulder Injuries. G. F. Henson, J. Bone & Joint Surg., 38-B: 528-531, May 1956

Wear and Tear in Joints. C. H. Barnett, J. Bone & Joint Surg., 38-B: 567-575, May 1956

PHYSICAL MEDICINE

The Future of Physical Medicine. Part 3. The Contributions to be made by the Basic Medical and Physical Sciences. Harry M. Hines, Am. J. Phys. Med., 35: 67-69, April 1956

POLIOMYELITIS

A Muscle-Tendon Transposition for Paralysis of the Lateral Abdominal Muscles in Poliomyelitis. J. M. P. Clark and A. Axer, J. Bone & Joint Surg., 38-B: 475-484, May 1956

The Problem of the Long Term Respirator Patient. H. N. New and H. A. Ladwig, Arch. Phys. Med. & Rehab., 37: 351-357, June 1956

Psychiatric Considerations in the Adjustment of Patients with Poliomyelitis. H. A. Robinson, J. E. Finesinger, and J. S. Bierman, New England J. Med., 254: 975-980, May 23, 1956

Serologic Response of Infants and Preschool Children to Poliomyelitis Vaccine. G. C. Brown, D. C. Smith, J.A.M.A., 161: 399-403, June 2, 1956

PSYCHOLOGY & PSYCHIATRY

The Complete Person. Francis J. Braceland, The Crippled Child., 34: 11, June 1956

Contributions of Anthropology to Psychosomatic Medicine. M. F. Ashley Montagu, Am. J. Psychiat., 112: 977-984, June 1956

REHABILITATION

Advances in Conquering Crippling. Harold B. Boyd, Crippled Child., 34: 4-6, June 1956

Rehabilitation . . . A Present Day Concept. William Beaumont, Brit. J. Phys. Med., 19: 104-112, May 1956

Classified WANT-ADS

WANTED IMMEDIATELY: TWO qualified physical therapists for staff positions in 565-bed general hospital. Good salary with regular increases, vacation holidays and sick leave; 40-hour week; laundry and meals provided. Write: Mr. Doff Griffith, Physical Therapy Dept., Akron City Hospital, Akron, Ohio.

PHYSICAL THERAPIST: In Hospital-School for rehabilitation of children with orthopedic handicaps. Complete interesting program. Good salary, merit increases. Annual paid vacation, sick leave, excellent retirement plan. Write Vera E. Dennis, Director of Physical Therapy, Illinois Children's Hospital-School, 2551 N. Clark, Chicago 14, Ill.

QUALIFIED PHYSICAL THERAPIST—Well established PM & R unit serving 312-bed general hospital. New England college town. Liberal personnel policies. Good starting salary. Semiannual reviews. Living quarters optional. Laundry furnished. Write Mr. George Stoddard, Personnel Director, Mary Hitchcock Memorial Hospital, Hanover, New Hampshire.

IOWA'S LARGEST PRIVATE HOSPITAL now planning expansion of facilities needs qualified physical therapist. Institution includes 100-bed Raymond Blank Memorial Hospital for Children. Post-polio cases, in- and outpatient work. Competent professional staff and assistants, excellent working relationships. Apply Anthony D. Damiani, Personnel Director, Iowa Methodist Hospital, Des Moines, Iowa.

OPENING for staff physical therapist in outpatient REHABILITATION CENTER directed by physiatrist. Wide variety of treatment program. Coordinated physical, occupational, speech-hearing, psychological and vocational services. Excellent personnel policies up to 3 weeks vacation, salary $3,900 for new graduate or depending on experience. Contact R. A. Silvanik, Administrator. The Rehabilitation Center of Summit County, Inc., 326 Locust St., Akron 2, O.

QUALIFIED PHYSICAL THERAPIST for treatment of all types of handicapped children, including cerebral palsy, under 21; established public school set up in Chillicothe, Ohio; school children and outpatients; medical supervision. No other therapist; fine opportunity to build up a good treatment service. Therapist with former experience required. Five-day week, all year employment, with a month paid vacation. Salary up to $5,000 for experienced person. For further information and application, write to Miss Grace Roberts, 553 East Town Street, Columbus 15, Ohio.

WANTED: QUALIFIED PHYSICAL THERAPIST with up-to-date rehabilitation experience to supervise physical therapy in newly developing rehabilitation center. Starting salary attractive. Unusual opportunity for pioneering. Living conditions ideal. Write to Robert P. Smith, M.D., Vermont State Rehabilitation Center, DeGoesbriand Memorial Hospital, Burlington, Vermont.

REHABILITATION SERVICES, INC., 200 Court Street, Binghamton, New York, will have staff physical therapist position available September 3, 1956. Modern facilities, outpatient service, established personnel policies, with salary dependent on qualifications. Inquire: Ward A. Merrell, Administrator, Rehabilitation Services, Inc.

PHYSICAL THERAPIST for well equipped C. P. Center; 10 month program. Salary commensurate with training and experience. Apply to Director, C. P. Training Center, 901-24th St., Newport News, Virginia.

PHYSICAL THERAPIST: STAFF position. Opportunity for varied experience; 650-bed general hospital, near center of cultural and educational activities. Vacation, sick leave, and social security benefits. Apply Personnel Director, Harper Hospital, Detroit, Michigan.

WANTED IMMEDIATELY: Opening in physical therapy department with the Northeast Colorado Health Department. Excellent opportunity for advancement, very modern department, has outpatient clinic, superior salary, liberal vacation, five-day week, working hours 8:00 to 4:30, all legal and state holidays off. Will have supervision. Prefer male therapist. Apply to James B. Harrigan, District Physical Therapist, Northeast Colorado Health Department, 700 Columbine, Sterling, Colorado.

WANTED: TWO PHYSICAL THERAPISTS, 40-hr. wk. Liberal personnel policies. Salary open. Wonderful location and climate in Rocky Mountain Area. Fully approved general hospital. Apply Manager, Memorial Hospital, Cheyenne, Wyoming.

PHYSICAL THERAPIST, male or female; positions available in large rehabilitation hospital. Good salary, increments, liberal vacations, holidays, etc. Contact Joseph Breuer, R.P.T., Chief Physical Therapist, Bird S. Coler Hospital, Welfare Island, N. Y., Mu 8-9400 ext. 385.

WANTED: PHYSICAL THERAPIST for an expanding, new modern hospital located in a high class residential area in Detroit. Excellent opportunity for steady and permanent employment in cheerful environment with contented staff and personnel. Five-day week, two weeks' vacation, holidays, sick time benefits. Apply Personnel Director, St. John Hospital, 22101 Moross Road, Detroit 36, Michigan.

WANTED IMMEDIATELY: Two additional physical therapists to join staff of three registered physical therapists. Fifty-bed accredited hospital specializing in cerebral palsy and postpolio; 37½ hourly week. Starting salary $300 for new graduate; commensurate with ability for experienced therapist. Wire collect Crippled Children's Hospital Medical Center, Inc., Jack Humphries, Administrator, 1316 Third Street, Corpus Christi, Texas.

(continued on next page)

Classified WANT-ADS

FULLY APPROVED 400-bed general hospital desires an experienced physical therapist to initiate a Department of Physical Therapy and Rehabilitation. Salary $450 monthly, liberal personnel policies. Apply Administrator, Providence Hospital, 2500 W. Grand Blvd., Detroit 8, Michigan.

PHYSICAL THERAPIST for 500-bed general hospital. All types of cases—mostly acute, short term. However, no polio or C. P. Recent graduate acceptable. Inquire: Akron General Hospital, Akron, Ohio.

PHYSICAL THERAPIST for expanding department in a new 50-bed rehabilitation hospital. Newly equipped department treating polio, orthopedic, and cerebral palsy children. Three weeks' vacation, Blue Cross and a forty-hour work week. Ideal location for advancement. Write: Administrator, Crippled Children's Hospital, 200 Henry Clay, New Orleans, La.

POSITIONS AVAILABLE for qualified physical therapists for active rehabilitation department in modern 500-bed, chronic disease hospital. Salary open. Four weeks' vacation. Sick benefits. Lunches. Apply Superintendent, St. Barnabas Hospital, New York 57, N. Y.

NEEDED IMMEDIATELY Physical therapist to organize a Home Service Program. Outpatient Physical Medicine Rehabilitation Center in University and capitol city. Excellent personnel policies. Write: Gloria J. Fitzpatrick, R.P.T., Director, Ingham County Curative Workshop, 615 N. Capitol, Lansing, Michigan.

WANTED: QUALIFIED physical therapist for field services in a large suburban County Health Department. Primarily working with polio patients and long term illnesses. Good starting salary with regular increments. Civil Service Employment. Write to: Westchester County Dept. of Health, Room 222, County Office Building, White Plains, New York.

PHYSICAL THERAPIST: Staff position with varied duties; 398-bed acute general hospital with expansion program underway. Opportunity for advancement in planned rehabilitation unit. Liberal personnel policies. Address replies to Box 18, care of the Physical Therapy Review, New York 19, New York.

QUALIFIED PHYSICAL THERAPIST to work in Dr.'s office in Westwood, Calif. Young female preferred. Reply to P. O. Box 24143, Los Angeles 24, Calif.

QUALIFIED PHYSICAL THERAPIST for immediate placement in established Hospital for Convalescent Children and growing Rehabilitation Center treating wide variety of patients, adults and children. Adequate space and well equipped therapy department. Employee benefits. Maintenance if desired. For complete information write: Miss E. G. Prien, Sol-e-Mar Hospital, South Dartmouth, Massachusetts.

WANTED: physical therapist, $4,000 salary, EASTER SEAL CENTER. Corner Bloxham and Gadsden, Tallahassee, Fla.

IMMEDIATE OPENING for qualified staff physical therapist, female; 160-bed general hospital expanding to 240. Construction now in progress. Also outpatient service to adults and children; 2 weeks' paid vacation, paid sick leave, 6 paid holidays, laundry, 40-hour week, social security, air conditioning. Salary open. Opportunity for advancement. Apply personnel office or Gertrude Beard, Director of Physical Therapy Department, Bethany Hospital, Kansas City, Kansas.

WANTED PHYSICAL THERAPIST for work in orthopedic section of clinic connected with medical school located on university campus. Salary commensurate with experience and ability—many employee benefits. Contact Dr. Robert P. Kelly, Box 459, Emory University, Georgia.

EXCELLENT opportunities for research-minded therapists interested in the field of prosthetics, in laboratory research and in field testing programs. Inservice training given prior to assumption of responsibilities. Field position requires considerable travel. Congenial working conditions and salary commensurate with qualifications and experience. Please send resumes to Dr. Sidney Fishman, Project Director, Prosthetic Devices Study, College of Engineering, New York University, 252 7th Ave., New York, N. Y.

OPENING IN CEREBRAL PALSY SCHOOL in new air-conditioned building. Very good salary and liberal personnel policies. Experience in cerebral palsy desirable. Write: Mrs. A. M. Inman, Director, 1601 Gatewood Ave., Greensboro, N. C.

Classified WANT-ADS

RATES

The rate per insertion is $1.00 per line. Typewrite your advertisement carefully and count 50 characters and spaces per line.

ALL WANT-ADS MUST BE PAID FOR IN ADVANCE. Make checks or money orders payable to the American Physical Therapy Association.

Closing date for copy and cancellations is two months preceding publication date.

Institutions or physical therapists who do not wish their identity known may arrange for Blind Ad Code No. All such want-ads must include the following which will be counted as 2 lines:

Address replies to _____ care of **The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.**

IMPORTANT

It is understood and agreed that the publisher shall have the right to reject or change the wording of any advertisement which in the opinion of the Editorial Board shall not be in agreement with the ethical standing of this publication.

Specialists in Electro Medical Equipment for Physical Therapy Rehabilitation and Diagnosis

ELCo

FRED LANDAUER CO.

11 BLENHEIM COURT
Rockville Centre, L. I., New York

Tel. RO 6-4527

TELA

REPRESENTING
LEADING MANUFACTURERS

Dependable Repair Service
Liberal Trade-Ins

Engineering Service for new developments

We buy and sell Good Used Equipment

Classified WANT-ADS

WANTED: MALE PHYSICAL THERAPIST, qualified to work with cerebral palsied children. Starting salary $350 mo. Spastic Children's Foundation, 1307 W. 105th St., Los Angeles 44, Calif.

If interested in PT in NORTH TEXAS DISTRICT contact: Charlene Nelson, Placement Chairman, North Texas District, Texas Chapter of the APTA, 4110 University Blvd., Dallas 5, Texas.

WANTED: Physical therapist for suburban Philadelphia public health nursing agency to give consultant services to staff of 25 nurses and direct services to homebound patients. Salary dependent upon experience. Social Security, retirement, 40-hour 5-day week. Liberal personnel policies. Position open now. Apply Executive Director, Community Nursing Service, Delaware County, 60 S. Lansdowne Ave., Lansdowne, Pa.

QUALIFIED physical therapist for established Elks Mobile Unit program, with young cerebral palsied children, in southeastern Ohio; treatment and parent instruction; orthopedic medical direction. Therapist with special training and experience in cerebral palsy required. Three hours driving per day. Station wagon and traveling expenses provided. Five-day week; three weeks' paid vacation; excellent beginning salary, dependent on qualifications; automatic increments. For additional information and application write Miss Grace Roberts, Cerebral Palsy Program Director, Ohio Elks Association, 553 East Town Street, Columbus 15, Ohio.

QUALIFIED PHYSICAL THERAPISTS for immediate placement in established Crippled Children's Hospital and rapidly growing comprehensive Rehabilitation Center treating wide variety of patients. Well equipped therapy department with pools and adequate space. Employee benefits. Maintenance if desired. Write: Jack E. Pearson, Morris Memorial Hospital and Rehabilitation Center, Milton, West Virginia.

REHABILITATION and general medical hospital desires services of additional physical therapists, male or female. Near New Haven, close to Hartford and Waterbury. Fully equipped, air-conditioned physical therapy department. Policies and consultations by Dr. Thomas Hines, Physiatrist-in-Chief, Yale University, Department of Physical Medicine. Physical Therapist-in-Charge, Miss Charlotte Kinney, B.S., R.P.T. Salary open. Request personal interview. Address: Director, Box 440, Wallingford, Conn.

POSITIONS AVAILABLE DALLAS: Expanding physical therapy department treating in- and outpatients including general, rehabilitation, orthopedic and neurosurgical cases. Excellent working facilities, air conditioning, new equipment. Under direction of physiatrist. Higher salary for experienced physical therapist. Opportunity for working with student program. Must be graduate of approved school. Contact Mr. Jack C. Hays, Chief Physical Therapist, Baylor University Hospital, 3500 Gaston Avenue, Dallas 10, Texas.

For Treatment of **SPASTIC CASES · CEREBRAL PALSY · STROKE POLIO · HAND INJURIES**

General Electric Company's

Silicone BOUNCING PUTTY

DOES NOT HARDEN . . . LASTS INDEFINITELY . . . CAN BE AUTOCLAVED

As a "TRIAL ORDER" — Send $2.00 for One $2.85 Jar

PHYSICAL THERAPY

S. R. GITTENS, *Sole Distributor* · **1620 Callowhill Street, Phila. 30, Pa.**

Check these major advantages of

RAYTHEON MICROTHERM® Microwave Diathermy

1. Precise heating . . . precisely controlled
2. More *efficient* absorption of energy
3. More *uniform* absorption of energy
4. Deeper heat penetration, minimum surface heat
5. Faster, greater increases in circulation
6. You can treat *more* ailments
7. Quicker, easier application
8. You can treat *more* patients
9. More safety for your patients
10. No radio or TV interference
11. Approved by F.C.C., Underwriters, Canadian Gov't.; proved in clinical tests

Ask your medical equipment dealer for complete information, free office demonstration of the *new* Raytheon Microtherm. Valuable clinical papers are available to you.

The most widely used Diathermy—Now better than ever

RAYTHEON

Excellence in Electronics

New Model CMD-10—Improved functional design . . . Easily transportable . . . 2-year Warranty on all parts.

RAYTHEON MANUFACTURING COMPANY
Equipment Marketing Department—Medical Sales
Waltham 54, Massachusetts